HOARD'S DAIRYMAN

MARCH 25, 1955

THE NATIONAL DAIRY FARM MAGAZINE

Skilled Hands

at work for the dairy farmers of America

RESEARCH—Here is a housewife being asked about her buying habits and uses for dairy foods. The skilled interviewer is from a research organization employed by American Dairy Association. Digging out the reasons people buy and use dairy foods is the first step in developing persuasive selling messages for radio, TV and print advertising.

MERCHANDISING—Good merchandising brings the product and the customer together at the point of sale. Hands skilled in retail selling are developing new ways to move more dairy foods out of the dairy case into the family kitchen. This has made your grocer's dairy department space the most profitable in his store.

ADVERTISING—Walt Disney's skilled hands produce the Disneyland TV show, one of the "top ten" TV programs in the nation. This adds real power to American Dairy Association's well balanced sales program. Through Disneyland, tested sales messages on milk and other dairy products reach 40,000,000 people weekly . . . at a cost of 1/10 cent per person.

PUBLIC RELATIONS—Milk was spotlighted on every TV and radio network and in practically all daily and weekly newspapers as a result of Eleanor Maley's flight to Paris to present a gift of milk to French Premier Mendes-France. Creating a continuing public interest in dairy foods and dairying—America's most progressive industry—is a job being done by skilled public relations people.

Many hands, skilled in special fields, work with your American Dairy Association toward a common goal: increased use of dairy products. Skilled researchers learn what people think about your products. Skilled advertising craftsmen create selling appeals that send housewives shopping for your products. Skilled merchandising men work for better store displays *and sales* of your products. Skilled public relations people build a continuingly favorable attitude and interest in your products.

Through the American Dairy Association program, supported by dairy farmers who invest 2¢ per hundredweight of milk or ½¢ per pound of butterfat marketed, this total sales effort designed to sell more dairy foods to more Americans is moving ahead.

The Dairy Farmers' Own

AMERICAN DAIRY ASSOCIATION

sells more dairy foods to more Americans

20 North Wacker Drive, Chicago 6, Illinois

You never outgrow your need for Milk

Opinions, Brickbats, Bouquets

These columns are open to the readers of Hoard's Dairyman for the expression of their opinion on any subject, whether radical or conservative, destructive or constructive, wise or foolish, critical or commendatory. Hoard's Dairyman assumes no responsibility for opinions expressed.

Herdsmen desperately needed

The article, "So you want to be a herdsman?" in your February issue is the best article I have ever read concerning herdsmen. In the 88 years that we have been in business we have had just two men with the qualifications stated and who really carried them out.

Your magazine should encourage more young men to become herdsmen as an occupation as the need for high caliber men in this capacity is desperate.

Ohio. H. D. SCHAAF.

Does big farming hurt?

The rich man can:

1. Outbid the small farmer for livestock, grain, or land.
2. Charge off his losses to income taxes.
3. Buy the choicest land.
4. Hire away the best hired help.
5. Raise large numbers of livestock; might flood the market, or sell when the market is good, or hold, whereas the small farmer must sell to meet his obligations.

The other side of the picture:

1. The small farmer can sell his stock to the rich farmer for more than he could get locally.
2. The small farmer can sell his land at a good price if it joins a big farm.
3. If the rich farmer didn't raise good breeding stock, the small farmer couldn't get the good stock as he couldn't afford to buy the better stock.
4. The rich man improves his land, good or bad, as well as his buildings.

Iowa. R. HJERLEID.

Look to your maker

I am a 22-year-old housewife, mother of two children, and a secretary. I was reared on the farm and, being employed as a secretary in this particular office, I again come into close contact with farmers. Daily I listen to their gripes, complaints (which are very real) and their opinions.

It is an evident fact that farmers are taken for granted on every side. Large business concerns are in a position to take advantage. I am of an opinion that corporations designed to help the farmer, upon close examination, prove to be helping only themselves.

These things cause me to wonder, along with many others, where the trouble actually lies. It would be preposterous of me, being young in years and a mere secretary, to think I could solve such a grave problem as this but let us take a broad look at ourselves.

Farmers, as a whole, are an honest and honorable class of people. But are we always honest with ourselves? We elect a man into influential office when he offers us the moon in the form of high farm prices. But did we check to see if he was a godly man, a man of good character? If he isn't, the promise is likely to be forgotten once he is on the payroll.

I agree wholeheartedly with M. H. Summy, whose letter appeared in this column, that our nation would prosper in every respect by earnestly serving God.

From our Bible we read of many kingdoms that fell when they turned their hearts from God. Also, we read of those that prospered when they abode in the counsel of His will.

Every American will agree that we, in this country, have been blessed in abundant measure since the Pilgrims first landed. Why, then, at this late date do we find those blessings gradually slipping out of reach with consecutive wars, corruption in government, divorces, unfairness, and so forth replacing them?

To me, the answer is very evident. Early America was a God-fearing people looking for a place to serve God. Today America has achieved greatness and to some extent has forgotten the simple things which made her great.

Farmers today are numerous enough to swing the balance in either direction. If we hope to withstand our international problems as well as communist aggression, we will have to look to Supreme guidance.

If every American farmer would pick up his Bible, study diligently, and look to his Maker for help, in a few years he would be able to raise his head and say, "This is a wonderful country in which to farm."

Missouri. C. E. K.

Sounds like dictatorship

I just read Mr. Burkhart's letter, "Live or survive," in the February 25 issue. As a farmer, I have experienced the same ups and downs as he has but it has never entered my mind to destroy simply because the price doesn't suit me. You will find that anything you waste, you eventually will want.

When you put your milk cows on the block, you are hurting the beef raiser.

In so far as the proposed organization is concerned, the fellow that would hold the top job would be too good to milk a cow himself. The letter sounds like dictatorship to me. Let the demand govern our price.

Ohio. ORA GRANDEY.

Need dairy grades

After 10 years we have taken our overdue vacation in the Southwest only to find that we could still improve on our dairy conditions. I spent some time looking around, only to find that we have a lot to learn about selling milk.

Down there the large dairies have ice cream, also ice cream desserts as we see our dairies make. I was told the cream to make ice cream was shipped in from our parts and that pure ice cream outsold the imitation that we are seeing our dairies sell.

Whole milk that sold for 30 cents a quart under the breed names Jersey or Guernsey outsold 4 per cent milk at 25 cents. Natural cheese outsold these cheese mixes and spreads. Also in the

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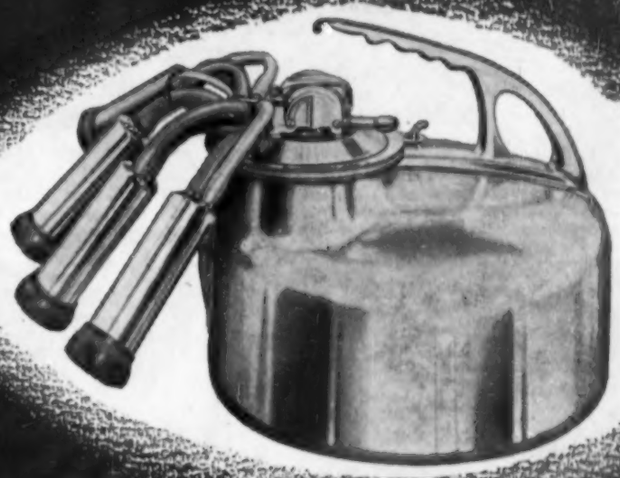
new "plus" design



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New Single Point or Two Point Suspension

Easy Pouring with Modern Design Handle and Lid that Swings Aside!

ONLY CO-OP UNIVERSAL HAS ALL OF THESE "PLUS" FEATURES

- "Pistol-Grip" handle; "Swing-Aside" lid for easy pouring.
- Deep moisture well in lid traps bacteria laden vapor.
- Safe, low vacuum.
- Soothing, side-to-side alternating action.
- Famous Calf-Nose inflations with off-center opening . . . prevent milk lock.
- Choice of single-point or two-point suspension hangers.

See it at your local dealer. Write for detailed information.

Universal MILKING MACHINE DIVISION | NATIONAL COOPERATIVES, INC. 5109 First Avenue, Albert Lea, Minn. Branches at: Waukesha, Wis., Syracuse, N. Y.

BACKED BY 39 YEARS OF MILKER MANUFACTURING "KNOW-HOW"

NEW TO THE NEW IDEA-HORN LINE, this No. "40" model fits the Allis-Chalmers "CA", Case DC-4 ('53-'54), Case VAC, I-H Super "C", or John Deere "40". Shorter overhang for row-crop and small tractors with short wheel bases.

POPULAR "30" FEATURES FAST, high lift, double or single-ram cylinders, standard or conversion frame. Because it is compact, and low in profile, you can work it in surprisingly tight places. Special models for Allis-Chalmers "WD" and "WD-45".

Proof that brains control brawn with a New Idea-HORN loader

Even the giant, Paul Bunyan, would have to take a back seat to the smart modern farmer with a New Idea-Horn hydraulic loader.

To begin with, you command tremendous power — up to 2500 lbs. breakaway, at or *below* ground level. To make full use of that power are 10 interchangeable attachments that handle more jobs than you can think up.

If that gives you a picture of a big, massive machine, you're in for a surprise. It's deceptively light, built of tubular steel, with joints that are coped before welding for extra strength. Only four tapered pins are involved in mounting or taking off. The attachments are quick and easy on-and-off, too. There are models to fit over 100 different tractors.

The price? It's low for the time and labor it saves you . . . but substantial enough to insure quality materials and expert workmanship.

Ask your New Idea dealer to let you operate a New Idea-Horn loader on your farm. You'll feel like you had an army of helpers!

NEW IDEA FARM EQUIPMENT COMPANY, DIVISION AVCO DISTRIBUTING CORP.

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☐ Loaders and attachments
☐ 90 Bu. Manure spreader
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☐ 75 Bu. Manure spreader
☐ 65 Bu. Manure spreader
☐ 120 Bu. PTO Manure spreader
☐ I am a student
I farm _____ acres

NAME _____

ADDRESS _____

HOARD'S DAIRYMAN

The National Dairy Farm Magazine

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COVER PICTURE

The fact that we have chosen pigs for our cover should not be construed with de-emphasizing or belittling the dairy cow. Many of our readers combine hogs with their dairy farm operation, as evidenced by the interest in our swine column so ably handled by R. H. Grummer. Thus we were prompted to use this Grant Heilman photograph.

These Yorkshires were photographed on the Pennsylvania farm of Homer Graybill; the young porkers belong to his son, Clair. If they appear to be snooty, it's due to the efforts of Mr. Heilman to get them to pose. He reports, "I'll take cows any day!"

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The receipt of Hoard's Dairyman is notification that money on subscription has been received. The label on paper will show date to which subscription is paid. Changes of address should reach us three weeks in advance. Include old address.

Unwholesome, immoral and questionable medical advertising is excluded. A sincere effort is made to carry advertising of only reliable people. We will always take it as a favor to be notified promptly whenever any advertiser's dealings with the subscribers are not in good faith or evidence a lack of business honor. Advertisers recognize the readers of Hoard's Dairyman as an up-to-date class of farmers, and we hold our columns for the patronage of only those with whom our readers can deal with profit and satisfaction.

Hoard's Dairyman is published on the 10th and 25th of each month. Advertising copy for the 10th of the month issue must be received before the 15th of the preceding month. For the 25th of the month issue, copy must be received by the 1st of that month.

Washington Dairygrams

PRICE SUPPORT BATTLE LAUNCHED IN HOUSE AGRICULTURE COMMITTEE. PROPOSAL WOULD BOOST BASIC COMMODITIES (NOT DAIRY) TO 90 PER CENT OF PARITY. FARM BUREAU OPPOSED. ASKED 82½ TO 90 BE CONTINUED ONE YEAR THEN DROPPED TO 75 TO 90. FARMERS UNION ASKED 100 PER CENT. LABOR CIO ASKED 90 PER CENT. ISSUE MAY BE APPROVED IN HOUSE. DOUBTFUL IN SENATE.

DAIRY PRODUCTION CONTROLS ARE IMPOSED IN BILL INTRODUCED BY REP. JOHNSON (WIS). WOULD MAKE MILK A "BASIC" COMMODITY. PRODUCERS VOTING FOR MARKETING QUOTAS WOULD RECEIVE 90 PER CENT OF PARITY. IF DISAPPROVED, SUPPORTS AT 50 PER CENT.

SCHOOL MILK PROGRAM WOULD BE DOUBLED BY BILL INTRODUCED BY SENATOR THYE (MINN). INCREASE TO $100 MILLION IN 1957.

EXPORT SALES DISAPPOINTING. SENATE TO INVESTIGATE WHY ONLY 207,000 POUNDS BUTTER SOLD INTO EXPORT AT COMPETITIVE BID PRICES. AUTHORIZATION FOR 10 MILLION POUNDS. BIDS REJECTED BECAUSE PRICE TOO LOW.

TAX SQUABBLE TAKING ATTENTION OF CONGRESS. POLITICAL MANEUVERING AT ITS HEIGHT. HOUSE PASSED BILL TO PROVIDE $20 INDIVIDUAL TAX CREDIT IN SPITE OF BUDGET DEFICIT. NOW BEFORE SENATE.

IMPORT PROTECTION PROVIDED FOR DAIRY PRODUCTS IN BILL PASSED BY HOUSE. WAS PROVIDED BY COMMITTEE ACTION. ADDED PROTECTION FOR OTHER PRODUCTS TURNED DOWN IN HEATED DEBATE. CLOSE VOTE.

HIGHWAY CONSTRUCTION PROPOSAL DRAWS CONFLICTING ADVICE FROM FARM GROUPS. FARM BUREAU OPPOSES ON FINANCING FEATURE. GRANGE FAVORS WITH MODIFICATION. UNION CHARGES LITTLE HELP TO RURAL STATES.

LOW INCOME FARMERS TO RECEIVE SPECIAL ATTENTION FROM PRESIDENT EISENHOWER IN MESSAGE TO CONGRESS. MAY INVOLVE SPECIAL CREDIT PROVISIONS AND ENCOURAGEMENT FOR GREATER INDUSTRIAL DISPERSION INTO RURAL AREAS.

Easy To Order Or Renew!

HOARD'S DAIRYMAN ☐ New ☐ Renewal
Fort Atkinson, Wisconsin

I enclose $_____. Please send me Hoard's Dairyman for the next _____ years.

Name_____R. F. D.____

P. O._____State_____

SPECIALS

THREE YEARS $2.00 FIVE YEARS $3.00

(Reg. Price 1 Year $1.00)

(CANADIAN: 1 Year—$2.00 — FOREIGN: 1 Year—$3.00)

"We get better results in MASTITIS CONTROL"

—says Earl Tull, Sr. of famed Sussex Farms, Seaford, Delaware.

TRIBIOTIC®

OINTMENT

penicillin • dihydrostreptomycin • bacitracin

FIRST—with triple antibiotic action!

FIRST—for rapid spread throughout the quarter!

FIRST—with medication that KILLS most germs causing mastitis!

EXCLUSIVE SPREADING BASE in TRIBIOTIC

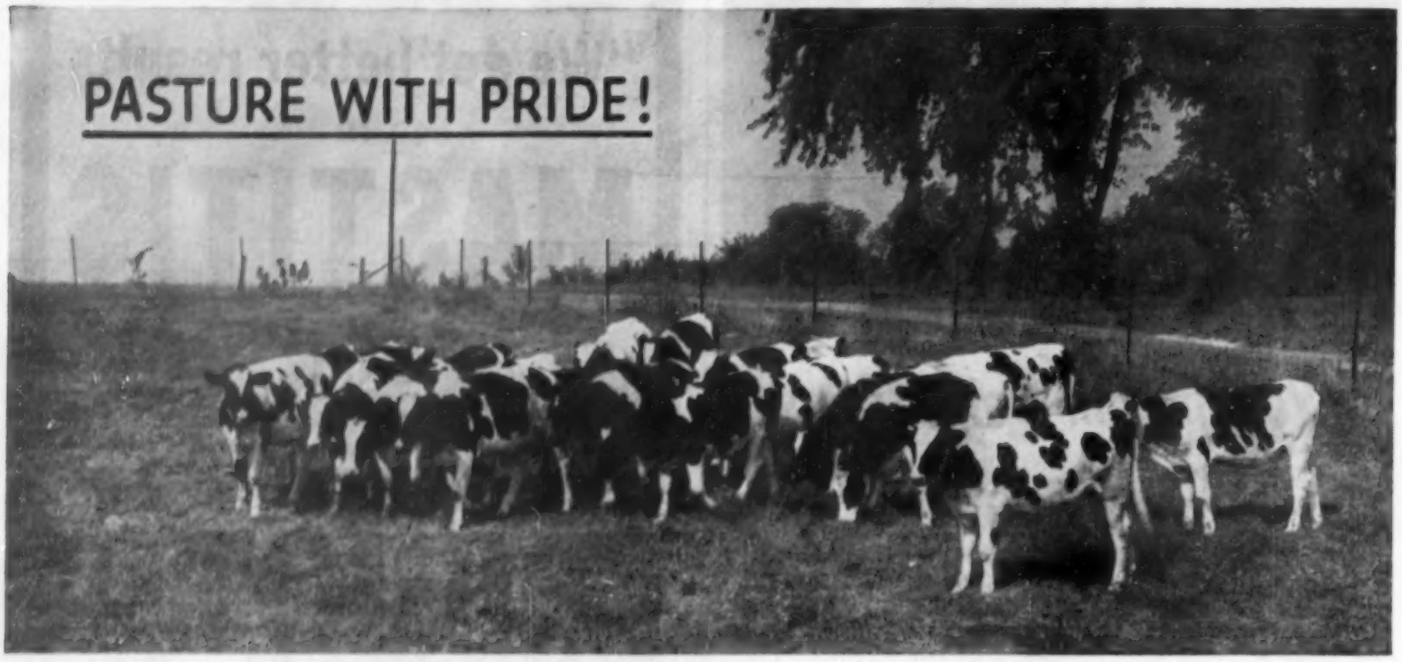
Ointment rapidly spreads the medication through the infected quarter. Note the great difference in spreading action shown below. (Drawn from actual photograph.)

SUPPLIED: Single-dose tubes, each containing 100,000 units procaine penicillin G, 50 mg. dihydrostreptomycin base as sulfate and 5000 units bacitracin.

Wyeth® Philadelphia 2, Pa.

AVAILABLE FROM YOUR DRUGGIST OR OTHER ANIMAL HEALTH PRODUCTS SUPPLIER

ADVERTISEMENT



ONE GROUP OF HEIFERS FROM THE MORE THAN 3,000 CALVES raised on the Consolidated Experimental Farm to develop the Kaff-A formula with Hidrolex. These heifers are now milking in the National Dairy Research Farm herd.

DAIRYMEN ARE TURNING OUT

Beautiful Growthy Heifers

—Raised With New Type Milk Replacer!

More than a half-million Fall calves and yearling heifers in pastures throughout America's dairylands are living proof that you don't need whole milk to raise top quality calves.

These beautiful, slick-haired, fast-growing heifers are a far cry from the pot-bellied, rough-coated animals that so often result from skim milk and old-style substitutes. Proud producers say the difference comes from the miracle "young life" ingredient—Hidrolex—that now is in Kaff-A, the leading brand of milk replacer.

In Hidrolex, milk sugars are "pre-digested" for the calf's delicate stomach. An enzyme breaks down the lactose into simple non-laxative sugars that pass directly into the bloodstream to give baby calves a quick surge of energy and to keep them growing at a rapid rate. In addition to Hidrolex, Kaff-A contains other balanced milk by-products, antibiotic, and high levels of vitamins A and D.

Good As Whole Milk

Typical reports on the new Kaff-A with Hidrolex cite the excellent growth and condition of calves raised on it. Harold Au, who milks 25 Guernseys for the Grade A market at Clinton, Iowa, and raises 13 calves each year, says "Kaff-A has helped me grow calves that are as good as if they were fed whole milk." Mr. and Mrs. Lacey Ferguson of Sterling, Virginia, "honestly believe if Kaff-A is fed as directed, you can raise just as good a calf as you can on straight milk." Another Iowan, Gilbert Peterson of Aurelia, says he has "found that my calves grow on Kaff-A equally well as calves I formerly raised on milk."

Willard Shipe, manager of the Dr. Webb dairy farm at Andrew Chapel, Virginia, says his calves show more "snap, pep, and looks of good health and growth" since he changed from whole milk to Kaff-A with Hidrolex.

Half the Cost of Milk

These users report they are getting the excellent results at real savings in calf raising costs. Even Peterson, on a $3.53 cwt. milk market, estimated that he saved approximately $3.00 per calf per month—"enough to pay for calf starter and other rearing costs." Au, when selling milk at $4.53 per cwt., estimated his saving at $12.00 per calf. Mrs. Ferguson told us, "Kaff-A is definitely cheaper than milk—especially when you have a ready market for Grade A."

How to Feed

These calf raisers use Kaff-A as a complete replacer for milk after colostrum. Au says, "Kaff-A lets me cut feeding all salable milk after colostrum. It's easy to feed, too, because it is so soluble and stays in solution better than other replacers I have tried." The Fergusons follow manufacturer's directions, starting Kaff-A the fifth day and replacing milk completely by the tenth day. Shipe puts calves on Kaff-A from the fifth day through the eighth week.

Complete feeding directions and helpful calf-raising hints are packed with every pail, box, and bag of Kaff-A. Or directions can be obtained from milk haulers, feed dealers, hatcheries, and elevators, most of which handle Kaff-A as a service to customers.

Kaff-A with Hidrolex is manufactured exclusively by Consolidated Products Company, with plants and offices at Danville, Ill., Des Moines, Ia., Atlanta, Ga., Springfield, Mo., Sacramento, Calif., and Lancaster, Pa.

"I RAISED BOTH MY PRIZE BEAUTIES ON KAFF-A and am completely satisfied," reports Lawrence Maly, 18-year old 4-H and F. F. A. member, Hadlyme, Conn.

"DID YOU EVER SEE CALVES with more vigor, snap, and appearance?" Fergusons ask. At six weeks this heifer prefers her Kaff-A dry over grain ration.

BRUCE TRICKETT, HERNDON, VA., admires the "snap, pep, and looks of good health" of calves on Fall pasture at the Dr. C. A. Webb Dairy Farm.

Advertisement

(Advertisement © 1955 C PC)

Opinions, Brickbats, Bouquets . . .

(Continued from page 275)

better food markets people would buy top grade meat first.

To me that means we are just fooling ourselves into thinking by more advertising we get people to buy what our dairies are putting out after they break down our good milk into 3 per cent, imitation ice cream, and filled cheese.

What we need most is a grading law:

1. Pure whole milk.
2. 3 per cent butterfat.
3. Skim milk.
4. Pure ice cream.
5. Filled ice cream dessert.
6. Pure cheese.
7. Filled cheese.

The buying public would soon show us what they wanted.

Why be foolish about oleo; pure ice cream would take the butter off the government's hands and maybe give the public a taste for good butter again.

Missouri. CARL TUCKER.

Butter for bald pates?

You carried an interesting item about movie star Lizbeth Scott using a quarter pound of unsalted butter to massage her hair and scalp. She says it works, too.

Since reading that I'm wondering if it would grow hair on bald heads. Here's a tip for the Department of Agriculture to experiment with. If successful, it would be a big help in reducing the milk surplus.

New York. M. C. COOPER.

Must test for supports

Only 7 per cent of the dairy farmers in Ohio have their cows on a production test. No doubt, this average would prevail quite well in every state in the country.

This brings out the fact that 93 per cent of the dairy farmers in Ohio are very poor businessmen; otherwise, they would have their cows under test and send the boarders to the butcher, to operate their farms more efficiently.

The average production of all cows in the state is only 5,447 pounds per cow, which is below the "break even" point of 6,000 pounds per cow. In other words more than half of the dairy cows in Ohio should go to the butcher, assuming the farmers are producing good roughage and feed which, of course, is the first essential for successful dairy farming.

Now it so happens that these poor dairy farmers are the very ones that are yelling for increased price supports, which we all know in the end only make for higher taxes and create surpluses which the government purchases with the tax money.

These surpluses only come back to plague the dairy industry in the various forms such as a dried milk powder which, when mixed with water, enables the housewife to have skim milk at a lower price than the dairies can afford to sell actual skim milk to the housewife. So the end result of price supports of any farm product is a vicious circle that only creates surpluses and increases taxes.

Where there are price supports for other commodities, such as wheat, corn, cotton, etc., there are always regulations and controls. But I have never yet read of any controls being placed on the dairy industry. Why not? Are the politicians in Washington afraid to apply controls in the dairy industry because most every farm does milk at least a few cows, which means a few more votes might be affected by dairy controls?

Unless I am very much mistaken, the surpluses in the dairy field could be very quickly eliminated if in the price support regulations for dairy farmers there were a stipulation that every dairy farmer receiving price supports must test his cows, and any cow, at the end of two lactations of 305c, 2x, that does not produce 6,000 pounds must go to the butcher.

I predict that within three years after such a regulation was enacted, there would be no surplus of any dairy products and that the dairy farmers would get more money for the milk produced by their good cows.

Enclosed you will find a copy of our advertisement in the current issue of the Ohio Guernsey Breeders' Association bulletin. You will note the ad states: "All the last 10 listed are going to the butcher. They are not good enough for any Guernsey breeder." This applies to cows that after two lactations do not produce our minimum of 7,000 pounds, 305c, 2x.

Ohio. J. C. GORMAN.

Need a good technician

In reply to the Jack P. Helm letter (January 25), I had a number of cows bred artificially with good results. Then technicians were changed and no cows were settled for six months. I bought a bull and all were settled the first round. I paid seven fees and lost at least $1,500 worth of milk production this winter when I should be milking more cows.

Illinois. A. HUNZIKER.

None can compare

I've been a subscriber of your paper for many years and think there is none that can compare with it. Your Round Table discussions are very helpful and especially the one, "We haul pasture to our cows".

We have been rotating our pasture daily and think that's about the last word in grazing. But we think we could stretch our pasture still farther by hauling it to the cows.

Minnesota. H. W. M.

What butter can do

Here is a little item about butter that I thought might interest you.

A friend of ours works in a large cookie factory. His job is to weigh up the ingredients for the various doughs. One particular mix weighs approximately 450 pounds of which 180 pounds are shortening. There is also added one pound of best butter for flavoring.

It seemed incredible to us that so little butter would have any effect on such a large amount of dough but our friend assures us that it is so and should it be left out he could detect it immediately.

"A little leaven leaveneth the whole lump."

Illinois. MRS. TAYLOR ELIASON.

AMMO-PHOS®
FERTILIZER

is water soluble...

AP*

makes the difference
in crop response

Experiments prove that crops take up more phosphate from water soluble Ammo-Phos fertilizer than from common mixed fertilizers. It's the AP* that makes the difference.

MAKE THIS SIMPLE TEST

Ammo-Phos *

To determine if the fertilizer you are now using is water soluble make this simple test. Place one-half teaspoonful in a glass of water. Then place a similar quantity of Ammo-Phos in another glass of water. Stir both mixtures for several minutes. Notice how water soluble Ammo-Phos goes into solution while the mixed fertilizer collects at the bottom of the glass. Even if left for several days, the ordinary mixed fertilizer will not dissolve completely.

This water solubility of Ammo-Phos means that your growing plants have all of the plant food available. You get what you pay for and your crop gets what you put in the ground. See your Mathieson dealer today and let him show you how AP* makes the difference in crop response.

Ordinary Fertilizer

MATHIESON

OLIN MATHIESON CHEMICAL CORPORATION

LITTLE ROCK, ARKANSAS • BALTIMORE, MARYLAND

2982

Have you reached this top?

IT is in the nature of things that when a man moves up in the world, he reflects his success in many directions.

It shows in the size and site of his home, the circles he frequents, the tailoring of his clothes.

And, most definitely, it shows in the car he drives.

So we suggest a look, if you will, at ROADMASTER as it is custom built by Buick in 1955.

It is, you will find, an automobile of almost opulent luxury tempered by meticulous good taste.

Its size and bearing and gold-like markings—the very suavity of its fleet-lined grace—tell all the world that here is a thing of custom stature.

And it is, as you will soon discover, a car crafted for comfort—with supremely soft seat cushions, with all-coil-springing to its masterful ride, with rich visibility in all directions, with exquisite handling ease that's blessed with the magic of Safety Power Steering.

But you will find that this, above all, is a motorcar of supreme and satisfying command — of instant response — of swift and silent obedience.

For what else would do for this greatest of Buicks but the soaring might of a 236-hp V8 engine — coupled to the absolute smoothness and electrifying safety-surge of Variable Pitch Dynaflow?

Surely, you owe it to yourself to try this top-level motoring experience—and your Buick dealer will gladly do the honors. See him this week.

BUICK *Division of* GENERAL MOTORS

When better automobiles are built Buick will build them

MILTON BERLE STARS FOR BUICK
See the Buick-Berle Show
Alternate Tuesday Evenings

ROADMASTER
Custom Built by Buick

HOARD'S DAIRYMAN
Founded in 1885

What happened to your share of the consumer's dollar?

When this housewife spends a dollar for dairy products, the farmer receives only 46 cents. Three years ago, he received 56 cents. Why is he getting the short end?

by Truman Graf

DAIRY farmers have been feeling the pinch since 1952 and will continue to do so in 1955. Farmers well know that their milk prices have fallen drastically (by over 17 per cent since 1952, and over 6 per cent in the past year) a year in which the price support level on milk was reduced from 90 per cent to 75 per cent of parity.

Both the housewife and the farmer have been wondering just how much of this change in price levels has been passed on to the customer. This is, of course, a question of marketing margins — the difference between the price the housewife pays and the price the farmer gets. Farmer and housewife are both entitled to know what goes into these margins and how—or whether—they can be reduced.

Key questions that have been asked about dairy prices and marketing margins include:

1. What percentage of the retail price of dairy products goes back to the dairy farmer?
2. When the farmer's price is reduced, how much of the reduction is passed along to the consumer in lower retail prices?
3. Are marketing margins reduced when the farmer's price is lowered? If not, why not?
4. Just what makes up the marketing margin? What costs does it include?
5. How can the marketing margin be kept as low as possible?

It is true that the farmer's share of the dollar the housewife spends for dairy products has been dropping. Take these figures, for example:

Of $1 spent for these products:	1952 the farmer received	1953	1954
	Cents	Cents	Cents
Butter	72	67	65
Cheese	60	51	48
Evaporated milk	50	45	43
Fluid milk	59	49	46
All dairy products	56	49	46

But this does not mean the marketing system is becoming less efficient. This is a usual change when the price level is falling. It's easy to show by examples why this is the case.

When the farmer is getting about half of the consumer food dollar, as is usually the case in dairying, the retail price would have to drop twice as much as the farm price if the farmer's share of the consumer dollar were to stay unchanged:

Old farm price 40c	Old retail price 80c	Farmer's share 50%
New farm price 35c	New retail price 70c	Farmer's share 50%

What usually happens is that, at best, only the change in the farmer's price is passed along to the consumer. In that case, a drop in the price to the farmer always means that his percentage of the consumer dollar drops:

Old farm price 40c	Old retail price 80c	Farmer's share 50%
New farm price 35c	New retail price 75c	Farmer's share 47%

On the other hand, when the price to the farmer rises and this rise is passed along to the consumer in full, the farmer's share of the consumer dollar actually increases:

Old farm price 35c	Old retail price 70c	Farmer's share 50%
New farm price 45c	New retail price 80c	Farmer's share 56%

A drop in the "percentage" going to the farmer such as we have recently been experiencing is therefore not in itself evidence that something has gone wrong with the marketing system.

One reason dairy support prices were reduced was so that lower retail prices would increase consumption.

Research studies show that, other things being equal, the consumer buys more dairy products as retail dairy prices drop.

Assuming the prices of competing products remain about the same, a 10 per cent drop in the retail price of fluid whole milk, for example, usually means about 5 per cent more fluid whole milk purchased. Similarly, research men in different places have reported that a 10 per cent drop will increase butter and cheese sales between 5 and 7.5 per cent and ice cream sales at least 7.5 per cent. But lower farm prices must be passed on fully to the consumer if we hope to get the maximum increase in consumer demand.

Here are retail prices and net farm value changes for dairy products from July through September, 1953, to July through September, 1954, before and after the decrease in the price support level for milk:

For these products:	The retail price dropped:	The farm value dropped:
A quart of fluid milk	.5c	.7c
A 14½-oz. can evap. milk	.6c	.4c
A pound of cheese	2.8c	2.7c
A pound of butter	8.6c	7.5c
The dairy "Market Basket" (the average quantity of dairy products purchased by urban families on an annual basis)	$6.55	$7.22

You can see that the retail price of fluid milk did not drop as much as the farm value of these products. But the retail prices of butter, cheese, and evaporated milk actually dropped more than the farm value of these products. However the "dairy market basket" figure shows that on the whole the lower price paid to the farmer was not fully passed on to the consumer.

The drop of $7.22 in farm value meant an 8 per cent drop in the farmer's milk check. But the corresponding $6.55 drop in retail prices for the "dairy market basket" was only a 3.5 per cent drop in what that market basket cost the consumer at retail.

Moreover, even when all of the drop in the farm price of milk is passed on to the consumer, percentage-wise the retail price takes a smaller drop than the farm price. We've shown above that butter prices fell more at retail than did the farm price for milk made into butter. Yet the drop was only 11 per cent of the retail price and 14 per cent of the farm price.

All this points up that farm milk prices might even have to drop as much as 20 per cent to produce a retail price cut sufficient to get Americans to use about 5 per cent more milk.

Here are the changes in farm values and in marketing margins for some of the important dairy products from July through September, 1953 to July through September, 1954, before and after the decrease in the price support level for milk:

For these products:	Farm values were:	And marketing margins were:
Fluid milk	.7c lower per qt.	.2c higher
Evaporated milk	.4c lower per 14½ oz. can	.2c lower
Cheese	2.7c lower per lb.	.1c lower
Butter	7.5c lower per lb.	1.1c lower

All of the farm values dropped with lower dairy price supports. Marketing margins dropped, too, on everything except fluid milk. But the drop in margins was in each case considerably smaller than the drop in farm values. For instance, for butter the drop in marketing margin was only about one-seventh as great as the drop in farm value of butterfat.

(Turn to page 306)

The author is assistant professor of agricultural economics at the University of Wisconsin. This article is an adaptation of an article appearing in the February 1955 issue of Economic Information for Wisconsin Farmers.

Farm Flashes . . . .

Seasonal reminders and research notes for the dairyman

PROTECT CHICKENS ON RANGE

Time to range pullets is just around the corner. One of the chief requirements for a good poultry range is protection from wild animals and birds.

The main troublemakers during the range period are fox, weasel, opossum, hawk, and

great horned owl. Occasionally the skunk, raccoon, and rat are bothersome, too.

The best way to keep the fox from molesting chickens is to keep one or more dogs on the range. It's a good idea to fasten a dog to a clothesline wire. If you use a wire 200 or more yards long, one dog can patrol a large-sized area. A single-strand electric fence around the range is also a good way to control foxes. String it 10 inches above the ground and 12 inches away from the poultry range fence.

To control rats and weasels, be sure there are no small holes or openings in the range shelter or brooder house. Set some steel traps to catch weasels and use some of the good chemical poisons to control rats.

You can catch owls by setting traps in trees or on posts. If hawks become too bad, the shotgun may be your best method of control.

IF YOUR SEEDINGS FAIL

There are several choices for farmers who are compelled to seed temporary or emergency hay crops.

A West Virginia agronomist reports that soybeans, planted on fertile soil at corn-planting time, will produce 2 to 2½ tons of hay per acre equal to alfalfa in feeding value. Soybeans will tend to smother weeds and leave the soil in ideal condition for planting small grain without further soil preparation other than harrowing. If cut early enough (the last of July or first of August) the soybeans can be out of the way in time to seed alfalfa.

Another possibility is to seed a mixture of 1 to 1½ bushels of oats and 60 pounds of Canadian field peas per acre. This should be done early. If either soybeans or field peas are used, seed should be inoculated with the proper bacteria.

Sudan grass is an old standby. It should be planted at corn-planting time and fertilized with 500 to 1,000 pounds of 10-10-10 or 12-12-12 fertilizer per acre. It will give a heavy cutting of grass for either hay or silage.

It is recommended that sudan be seeded by itself at the rate of 20 to 30 pounds per acre, or along with soybeans at the rate of 25 pounds of sudan and 1½ bushels of soybeans per acre. The mixture will give you a greater yield of forage.

There is no danger of prussic acid poisoning if you wait until the crop is 16 to 18 inches high before turning cows on it. Since the crop grows rapidly, it will reach this height in from 5 to 7 weeks after seeding. The young, short shoots are the ones high in acid.

CHEMICALS CAN BE A HAZARD

The lids should be clamped tight on all containers holding farm chemicals. Even then, they should be stored out of the reach of children, animals, and seed grain.

University of Wisconsin weed specialists warn that a pound of 2,4-D (an effective weed killer) can kill the germination on three to four thousand bushels of seed if the chemical is stored in a granary.

Since milk easily picks up odors, the milk house is also a poor place to store chemicals.

A dry machine shop or shed is the best place to keep farm chemicals. Be sure to keep all containers labeled. If you are not sure which chemical is in which can, get rid of it.

TREAT LAWNS IN EARLY SPRING

Early spring is the best time to control grubs in lawns with chemical treatments.

Several grubs, including Japanese beetle, May beetle, and Asiatic garden beetle, are pests that feed just below the surface of the soil, cutting off roots. In a severe infestation, roots are damaged so that the turf can be rolled back like a rug.

To make matters worse, moles feed on all kinds of grubs and they may enter a lawn and cause severe damage from their movement throughout the area. Applying chlordane or aldrin to the surface of the soil will give a relatively quick kill of grubs.

A Rutgers University entomologist suggests applying chlordane at the rate of 5 pounds of 5 per cent dust to 1,000 square feet. DDT at the rate of 6 to 7 pounds of 10 per cent on 1,000 square feet will also give a good kill, but action is not so quick. Any of these materials can be applied in fertilizer at the same dosage.

If the lawn is cut and raked before treatment, the chemical has a better chance to get down into the soil. It usually takes 2 to 3 weeks for the chemical to penetrate the soil and control pests.

Winners announced May 10

We are now in the midst of grading the thousands of entries received in the 25th Annual Hoard's Dairyman Cow Judging Contest. Every effort is being made to have the scores tabulated so the winners can be announced in our May 10 issue. In the same issue we shall present the judges' official placings and reasons. We hope you have enjoyed the contest.

ANIMALS HAVE DENTAL TROUBLES

If you have an animal that isn't doing very well and you have been unable to determine the trouble, it is very possible a toothache is the cause.

A University of Illinois veterinarian says that dental troubles, not unusual in animals,

may seriously affect an animal's growth or production. For example, if a cow cannot chew or shred its food properly, the effect can be the same as if it is not getting enough to eat.

In young animals the trouble may come from improper shedding of baby teeth. Older animals may injure a tooth by biting on a hard object, or they may have some irregularity in the shape of the jaw or irregularly worn teeth.

Dental troubles in animals may be indicated by frequent drooling, slow and deliberate chewing, or sudden drawing back of the animal from cold water.

A veterinarian can quickly check for dental troubles. Correcting these troubles can mean better eating, better digestion, and better over-all health.

SAFE WIRING SAVES TROUBLE

Probably the most common hindrance to effective use of electric labor-saving devices is outmoded wiring.

Those old-fashioned electric drop cords hanging from the ceiling are likely to have metal sockets on the ends with metal pull chains. If the drop cord has been done away with, there still may be metal sockets in the ceiling with metal pull chains. A Colorado agricultural engineer says these are a source of danger.

The danger is likely to be greater where the drop cords are close to laundry tubs, sinks, or in the basements where the floor sometimes is damp. Touching the metal socket or chain while standing on a damp floor or while touching water pipes, will produce an injurious shock. If the insulation on the socket is cracked or broken, the whole socket can deliver a fatal shock.

Frequently, loads have been added beyond the original capacity of the circuit. Flickering lights, slow action of heaters, and overheated and burned out motors are a far too common occurrence. The cost of rewiring is often repaid in savings in the electric bill, for energy lost in resistance heating of undersize circuit wires still shows up on the meter but serves no good purpose.

A closer look at Green Feeding

There is less variation in daily milk production . . . alfalfa works better than Ladino . . . requires almost twice as much labor.

by Bruce R. Poulton

COWS WILL EAT up to 150 pounds of green chopped up material in less than two hours and then spend the rest of the day lying in the shade near a good water supply.

MUCH progress has been made in pasture use over the past several years. Permanent pastures have given way to rotation pastures in many areas. More recently the practice of rotating pastures has been modified to a strip grazing system where cows are shifted each day.

Green feeding, or hauling pasture to cows, is the final step in this progression. Substituting machine harvest for animal harvest means that all of the forage normally wasted by grazing animals can be saved. Experiments conducted at Minnesota, Rhode Island, and New Jersey found grazing animals wasted 20 to 25 per cent of the forage in a pasture. At Rhode Island it was found that manure spots alone cause a loss of 10 per cent of forage in a pasture.

Higher yields per acre . . .

At least four experiment stations have made comparisons of acre yields of milk or meat.

In Minnesota, milk production by two groups of cows was compared. One group was pastured on a daily rotation basis; the other group was green fed. All cows received 1 pound of grain for each 6 pounds of milk produced. Those cows on pasture produced 1,525 pounds of milk per acre, while those green fed produced 2,538 pounds. In similar trials at Rhode Island milk production per acre from pasture was 2,585 pounds, and 3,156 pounds per acre on green feed.

California workers found beef production per acre was 417 pounds with rotation grazing, 580 with strip grazing, and 704 with green feeding. This was a 69 per cent increase with green feeding over rotation grazing.

More even milk production . . .

Due to variation in temperature, humidity, and amount and quality of pasture grass available, it's difficult to avoid extreme variations in daily milk production when cows are on pasture. In New Jersey trials there was a far greater variation in daily milk production when cows were pastured than when they were green fed.

Rhode Island also reported better persistency of daily production from green feeding. In the recent Hoard's Dairyman Round Table, all the panel members reported more consistent production since they started green feeding. This point is very important to dairymen who rely on summer production for establishing their bases.

More animals per acre . . .

Only 30.6 acres were required to furnish feed for 35 cows being green fed in Minnesota trials, while 50.9 acres of pasture were required to carry the same number of grazing cows. At Rhode Island grazing cows required 1.4 acres per head while green fed cows needed 1.1 acres. Similar differences were found in California and New Jersey. Where expansion of a farm is limited by urbanization or land costs, green feeding offers an opportunity to expand the number of animal units.

At Minnesota little benefit was found in harvesting short crops, such as orchard-Ladino mixtures. In fact, cows grazing these crops produced more than those green fed. Such crops can be grazed more closely than they can be clipped by the forage harvester.

Big differences in favor of green feeding have been found with tall crops, such as oats, alfalfa, alfalfa-brome, or sudan mixtures. These crops should be cut at the early hay stage. A harvesting calendar should be worked out that will insure a supply of green feed throughout the summer.

How often should it be cut? . . .

Of the five farmers interviewed in the Hoard's Dairyman Round Table (January 25, 1955), three harvested only once a day while two cut twice daily. It must be done at least once daily. At Michigan mold problems developed when green feed was harvested only three times a week. Here at New Jersey we cut twice a day.

Minnesota workers reported that material heated badly a few hours after being chopped and blown into the wagons. If you distribute the forage in bunks, heating will not be as much of a problem and harvesting once daily will be adequate. On the other hand, if self-feeding wagons are used, harvesting twice a day is more desirable.

The amount of forage that must be harvested daily is an important factor. In our trials the average daily consumption was 92 pounds of green feed per *(Turn to page 316)*

The author is research associate in dairy husbandry at Rutgers University, New Jersey.

STANCHION FEEDING is preferred by A. J. Rusterholz, transplanted Vermonter. Prevents abuse by "boss" cows. Makes for more accurate feeding. Stanchion line to be covered with aluminum roof in future.

These vacationland dairymen follow some strange practices. Imagine feeding a pound of grain for every pound of milk. For $7 milk, you would, too.

by Ben Brown

They do, too, have cows in FLORIDA

NOTWITHSTANDING the tales told by Northern dairymen returning from vacation, Florida is indeed a dairyland. In 1953, 197,000 Florida cows produced 964,000,000 pounds of fluid milk for 2,771,305 Floridians, and more important, Florida dairying is growing. From 1950-53, numbers of dairymen increased 10 per cent, cows 23 per cent, and production 39 per cent; remarkable strides for a three-year span.

Geographically, physically, and in every way pertaining to climate and soil, she is different from any other region. Even within the state one finds varied conditions. Thus, one would expect to find Florida dairying different, but it is dairying just the same.

How is it different? First, it's big. Like her truck and orange farms, Florida's dairies are large-scale operations. Family farming is missing.

Housing and milking methods are perhaps the next most obvious differences. In the Florida climate, milking rooms or "milking barns" are nearly universal. Cows stay indoors only minutes at a time.

A third big difference is feeding ratios. Grain feeding is practiced at a rate no Northerner could afford, often reaching 1 pound grain to 1 pound milk proportions. But, good roughage is dear; milk is valuable, and grain is inexpensive. You can feed 1-1 in Florida and prosper.

A good example of Florida dairying is the Hall and Boyd operation outside Miami. Balmy Miami, serving a million people, lies below the frost belt and has one of the most unusual soil and water set-ups in the world. Miami farmland, rapidly being subdivided is approaching values of $1,000 per acre.

The foot-deep soil, largely an ultra-fine, lime-like material called marl, rests on coral rock and is only 4 to 6 feet above the water table. The land is low, and during the rainy season, the drainage canals are insufficient to keep some of this land from flooding.

Western expansion is out of the question, for the Miami area is primarily a strip built up by waves pounding in from the sea. Fifteen miles inland one strikes the Everglades, a never-never-land of pretty birds, saw grass, and alligators.

Thus, Hall and Boyd and other dairymen in the area have to operate at a level to show a profit on land which must constantly be evaluated as city real estate. It will raise only certain crops. It is subject to flooding. And in addition, this land is in direct competition with truck crop farming acre for acre.

Under such conditions it is no wonder the average Miami dairyman keeps more cows per acre than would be the case up North and raises less roughage, generally, per cow.

Not so, the Hall and Boyd place, however, at least as far as roughage is concerned. They have learned to raise lush Hubam clover, which they clip daily with field choppers, blowing fine green feed into wagons from which the cows may eat directly. They also raise alfalfa and other clovers (California Burr and Kenland Red) along with Pangola, Para, and Carib grasses.

By fertilizing their fields and taking advantage of their wet and dry seasons, they can cut green forage six months of the year. During the rest of the time, they pasture.

It has taken time to build toward such an arrangement. When Herman Boyd came to Miami from his native Kentucky in 1930 things weren't done that way. He went to work for a local dairyman and later became foreman of that man's operation. Little by little he saved toward the day when he could operate his own place.

All those years, Mr. Boyd thought about the Florida roughage problem. Now he has pioneered many practices which his neighbors have since adopted, often under his counsel.

Hall and Boyd today farm 563 acres of

MILKING ROOM as shown here is typical of newer Florida installations. This efficient, clean unit is owned by William Bixby. The older dairies have milking barns occupied only during time of milking, usually done in shifts or "strings." (A "string" is a milking barn full of cows.)

NEWCOMERS to dairying in Florida are the William Bixbys and Jennifer. A bulk tank system is used, with 75 cows being milked.

$1,000-acre land, and keep about 700 cows. Thirty per cent of the herd is Jersey and another 30 per cent Holstein, with the rest divided between Guernseys, Brown Swiss, and crossbreds.

They sell their milk wholesale to a local producer-distributor. The going price in Miami for fluid milk is 61 cents per gallon, which figures out to be $7.09 per hundred on a 4 per cent base.

They have 60 cows on three-time milking and most of these are Holsteins. On a recent test day, these 60 cows gave 3,027 pounds of milk and received 900 pounds citrus pulp, 700 pounds 20 per cent dairy mix, 180 pounds molasses, 4 bales of hay and 3,000 pounds of green Hubam forage. In addition they grazed 1½ hours on fine clover.

The rest of the herd gets about 1 pound grain to 2 pounds milk, the grain feed being a 50-50 mixture of 20 per cent feed and citrus pulp. (This results in a ration roughly 14 per cent protein.)

Hall and Boyd hope soon to develop a silage program.

They cannot make hay and neither can their neighbors. They feed as little hay as possible, since it is priced at $57 per ton delivered.

Reports of diseases in Florida are apparently exaggerated. They do have worm problems with baby calves, but treat these successfully with 20 grams of phenothiazine per 100 pounds of body weight, either by drench or capsule at 4 to 6 months, repeating the treatment a month later. While they have some tropic parasites, they escape some Northern problems and their herd health is no tougher a problem than anywhere else. Calfhood vaccination is practically universal.

Six men do the milking on the Hall and Boyd place, working two shifts. Three men milk 480 cows each shift and no one on the place works more than six days a week.

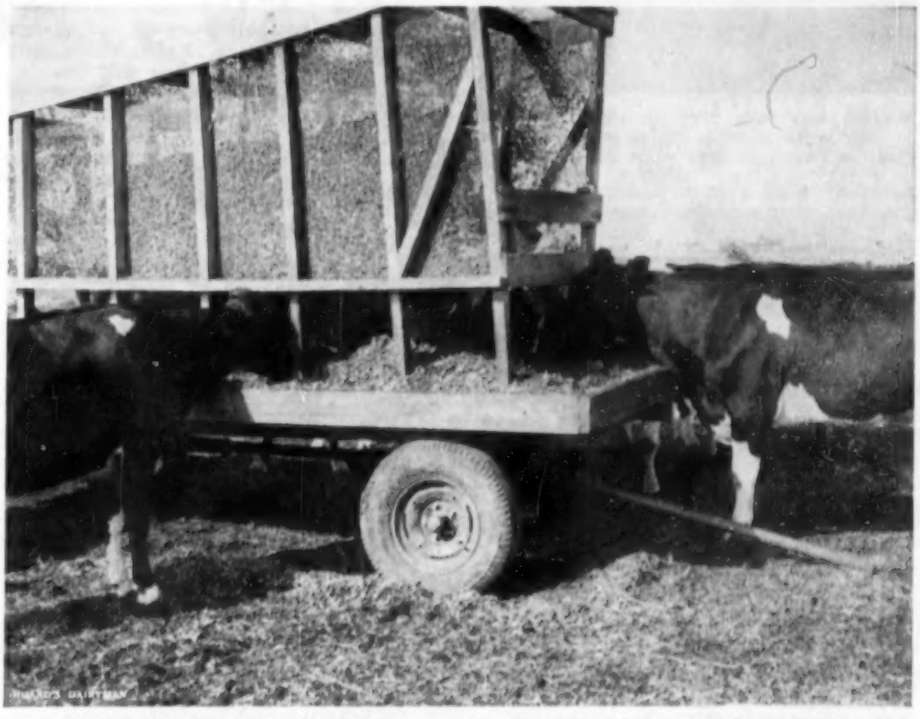
Milkers at Hall and Boyd receive excellent wages, but are carefully picked for competence, reliability, and character. Formerly a milker himself, Herman Boyd says one can hardly pay too much for the right kind of man on a dairy farm and the wrong kind of man is never a bargain at any price.

Mr. Boyd is a livestock man at heart and loves fine cows. They are raising some replacements now and feel that better cows are now their primary goal.

To many readers, the Hall and Boyd operation may seem a pretty big place to pick for an example. Actually, however, it is not. There are only 94 farms in the whole Miami milkshed. Twenty-nine of these farms milk a total of 17,000 cows. Sixty-four farms have sufficient volume to own their thermos trucks. Nearly all the rest have bulk tank pickup. Miami dairying is big business.

If Hall and Boyd are not typical, it is because of their roughage program and the quality of their cows. *(Turn to page 292)*

15 TONS OF CHOPPED FEED per acre are harvested annually on the A. J. Rusterholz, Jr. farm. Oats provide green feed, cut twice per season, first cutting about 60 days after planting.



COWS EAT DIRECT FROM WAGON. A combination of chopped Hubam and oats, fed directly from specially-constructed wagons, has changed the whole roughage picture in South Florida.

TRACE ELEMENTS must be fed in Florida. Robert Hall shows his feeder, which is vaned, thereby keeping it headed out of the wind.

$1,000 PER ACRE may be value of this dairy land outside of Miami. Herman Boyd is shown here with part of Hall and Boyd 700-cow herd. These are milked three times daily. Mr. Boyd reports disease problem in Florida exaggerated. Parasite problems treated with phenothiazine.

If flood, insects, or winterkilling take over PLANT EMERGENCY CROPS

Although substitute crops give smaller yields, they will provide pasture, hay, and winter feed for cattle.

by W. O. Scott

WATER may take over pastures, hay fields, or cash crops when heavy spring rains come. Plant an emergency crop when the field is dry.

HUNGRY GRASSHOPPERS ruined this corn. An emergency crop could still be planted which would mature before a freeze-up in the fall.

MOTHER NATURE left only a few sprouts for the cows. Pastures such as this one should be plowed up and planted to an emergency crop.

ANY one of Mother Nature's destructive offspring (flood, hail, insects, winterkill, etc.) can make a shambles of your fields. Practically overnight the hay, pasture, or grain, you counted on, is gone.

For awhile it may look like the cows are going to be pretty skinny, come winter, or the pigs might go to market early. But, fortunately, there are some substitute crops that you can use for emergency plantings.

Ordinarily the substitutes will not produce as large a crop nor one of such high quality as the original planting. They will, however, give you an acceptable yield and quality of grain or feed in a relatively short growing season.

Your choice of the particular crop to use in an emergency will be influenced by several factors. Whether you need grain, hay feed, or pasture; the amount of growing season left, the type of climate typical of your area, are all important factors in your choice.

The most important of these is probably the purpose for which the crop is to be used. For that reason the following suggestions for emergency plantings are grouped according to their intended use.

Cash or feed grain . . .

Corn and soybeans are not generally considered emergency crops. But, unless the loss of the original corn or soybean crop occurs too late in the season for early varieties to mature, the best emergency plan is to replant with earlier-maturing varieties.

The early varieties will not yield so much as the medium-to full-season varieties planted at the normal time, but the return will usually be greater than can be obtained from other substitute crops.

The success of late plantings depends on the weather, but early maturing corn hybrids in much of the corn belt will make a satisfactory grain crop when planted three to five weeks later than normal. The safe date for late planting, of course, varies in different areas of this region. Remember, late planted corn may be "soft" when time for the first frost but, it will still make good silage.

Early-maturing varieties of soybeans can be planted a little later than corn. In central Illinois, farmers consider soybeans a good risk planted as late as the first of July. This is about 10 days to 2 weeks later than they like to plant late corn.

Sorghum is another crop that can be considered for grain or feed, especially silage. This crop is best adapted to the southern Great Plains section of limited rainfall and warm growing seasons. However, it will grow well in the more humid sections. Actually, cool weather is usually more detrimental to the crop than is moisture.

Grain production with this crop is more uncertain in the cooler sections of the country than is fodder or silage. Late planting of the grain sorghums should probably not be tried north of central Illinois and central Indiana. The early maturing forage types can be used farther north than this.

There are several early-maturing varieties of both types of sorghum. Two of the early varieties of forage sorghum are, Early Sumac and Rox. These mature in about 100 to 110 days. Forage sorghum does not need to be mature before going in the silo, but it should be in the stiff dough or soft starch stage. Some of the grain types that mature in 75 to 90 days are: Norghum, Reliance, and Early Hegari.

Sorghum requires the same type of seedbed and about the same care as corn. It is more susceptible to chinch bugs, but the new insecticides help to reduce that hazard. It is planted in rows 1 to 2 inches deep at the rate of 3 to 5 pounds an acre for the grain types and 5 to 8 pounds an acre for the forage types. Treat the seed of all varieties with a fungicide, such as Ceresan M or Panogen before planting.

Consider buckwheat . . .

No discussion of emergency crops would be complete if buckwheat were not mentioned. This crop will mature grain in 10 to 12 weeks after planting. It is best adapted to a cool climate. High temperatures and dry weather at blooming time are serious hazards to the crop in the warmer sections. Consequently, soybeans and sorghums are usually a better risk in these areas—if there is time enough for them to mature.

If it is too late to try either of these crops, gamble on the buckwheat. It will bloom until killed by frost, and September may be a cool month. Buckwheat is usually drilled at the rate of 3 to 5 pecks of seed an acre, 1 to 2 inches deep, in a seedbed like you would prepare for wheat.

If winterkilling has seriously depleted your stand of winter wheat, replant the field to another crop, such as corn, soybeans, or a spring grain. If winterkilling has only moderately decreased the stand, apply nitrogen in the early spring to improve yields.

Weeds will usually become a problem in thin stands. If this happens, use 2,4-D. To avoid 2,4-D injury to the wheat, follow the recommendations of the manufacturer or your county agent. It should not be used when legumes have been seeded in the wheat because they are susceptible to 2,4-D damage.

A serious problem on many farms in the drouth stricken area of the corn belt in 1955 will be the pasture. Even in the more fortunate areas where there was enough moisture to catch new seedings, there will be losses from winterkilling, insects, or disease before this spring.

A complete loss of stand, of course, means starting from scratch. But, if you have suffered only a moderate loss in stand, it may be best to leave the pasture and attempt to thicken the thin stand *(Turn to page 308)*

The author is associate professor of crops extension, University of Illinois, Urbana.

IDENTICAL TWIN HEIFERS are shown at breeding age. The smaller heifers had only hay to eat since they were a year of age, while the fat ones had free access to grain, consuming approximately fifteen pounds per day. This early fattening decreased their milking ability.

HEIFERS . . . watch your diet!

Fattened heifers produced only half as much as their twin mates fed normal rations in the Tennessee trials.

by E. W. Swanson

HOW should heifers be fattened? Or should they be fat at all? These questions directly affect a dairyman's profit. If there is no return from feeding a heifer enough to make her fat, the extra feed required for this purpose is an outright loss.

If there is value from fattening, the return should be enough to pay for the cost.

But there is a third terrible possibility that the fattening may actually make the heifer a poorer milker so that the loss would be greater than the extra feed cost of growth. The method or time of fattening may also be important.

These questions have been argued pro and con by dairymen for many years. Some are firmly convinced, usually from experience, that fat heifers do not make good milkers. Others make it a point to have their heifers in high condition before their first lactation, and have found from experience that this results in good production.

The author is professor of dairying at the University of Tennessee.

Can these apparently opposite points of view be reconciled and the different results explained? One favorite explanation has been that fat heifers are those with a low inherited tendency to give milk and that heifers that have inherited high milking potential will not fatten easily. This may be true of cows in lactation, but it is hard to prove with heifers before calving.

Heavy milkers need good appetites . . .

Certainly a large appetite is a very important characteristic of a heavy milker. Heifers with hearty appetites and abundant feed will fatten more easily than those with poor appetites. It would not seem reasonable to cull a heifer because of her big appetite. Even the highest producing cows will put on plenty of fat if fed well while dry.

On the other hand, it is recognized that one of the major differences between beef and dairy heifers (besides milking ability) is the greater ease of fattening beef heifers. The crucial question is, "Does the poor-milking, fat dairy heifer fail to milk satisfactorily because she is fat, or does she become fat because of her poor milking tendency?"

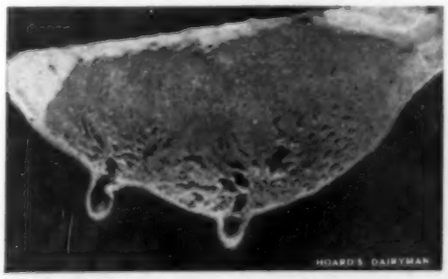
In recent years some definite experimental results have appeared which may give us the right answers. One of the first was an experiment by H. A. Herman and co-workers at the University of Missouri. In trying to get extra fast growth in a group of Holstein heifers they fed them a highly concentrated ration free choice. They got large, rugged, well grown heifers which were fat at their first calving. No troubles developed in the fat, rapid-growth group, but they were quite disappointing as producers. They averaged less than 8,000 pounds of milk while similar heifers in the same herd raised on more normal rations averaged about 10,000 pounds of milk in their first lactations.

It was reported that the rapidly-grown heifers also produced poorly in later lactations. Although it was supposed that the inherited milking potential in the fat heifers was equal to that in the normals, this factor could not have been satisfactorily controlled without very large groups of heifers; so some of the production differences may have been due to inheritance.

Heifers shouldn't be underfed . . .

Identical twin heifers do have the same inherited milking ability, and if raised and treated alike they milk very nearly the same. A number of years ago Hansson and his co-workers in Sweden divided several sets of identical twin heifers and fed one mate at 30 per cent below and the other 30 per cent above normal. Thirteen sub-normal heifers averaged 6,789 pounds of milk and their super-normal mates averaged 7,420 pounds of milk in nine months. This was a very small difference even though in favor of the super-normal group.

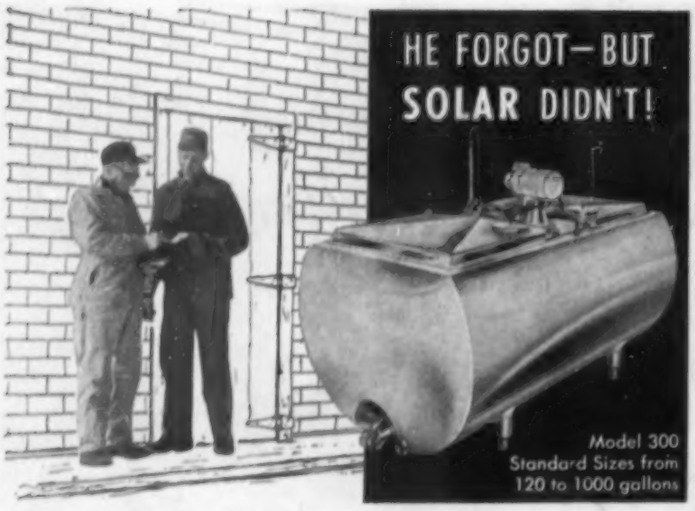
In another Swedish experiment with identical twins, G. Bonnier and A. Hansson found that heifers fed 25 per cent below normal compared to 25 per cent above normal produced in nine months *(Turn to page 319)*



UDDER SECTION from normal-fed twin compares in appearance to udder tissue from good milk cows. Note dense area of secretory tissue.

FATTENED TWIN'S UDDER has less secretory tissue, thick fatty layer over the whole udder base, strip of fatty tissue between the quarters.

LARGE OPEN SPACES are areas where secretory tissue should have developed. Early fattening prevented normal growth of this udder.



Right after Elmer Hanson of Elk Mound, Wisconsin, shown at right, got his Solar tank, he just plain forgot and left it on manual operation all one night. Next morning the gauge had dropped to 33 degrees, *but there was no ice!* Solar's exclusive "Controlled Expansion" refrigeration control system isn't just a name. "Controlled Expansion" is an engineered system that absolutely assures against ice formation under any conditions, and helps make it actually cost less to own and operate a Solar.

Shown with Mr. Hanson is Marshall Horlacher, Dolly Madison Dairy tanker driver of Eau Claire, Wis. He had just read the electronic liquid level indicator on Mr. Hanson's Solar, taken a butterfat sample, and is now giving him his milk receipt, right at the milk house door. This bulk pickup system gives farmers the satisfaction of doing business right on the farm.

SOLAR COSTS YOU LESS TO OWN!

Be sure and see Solar—the tank that costs less to own—and the only tank with Controlled Expansion. See it at your Solar dealer's, or write the Solar Farm Tank Dept.—6600 South Narragansett Ave., Chicago 38, Illinois for full information.

SOLAR *FINEST IN FARM TANKS*

Why did we design the Perfection Suspended Milker with a balanced pail?

A suspended milker unit, depending on the amount of milk in the pail, may weigh as much as 65 pounds. If this weight is not properly distributed it can be harmful to a cow's udder. Some milkers seem to need this weight to keep teat cups down. Perfection, with its balanced pail, does it the safe way with excessive weight going on the cow's strong back, *not on the udder.*

Cushion-top Perfection Inflations seal on the teat . . . not against the base of the udder. (You know what we mean if you've used a milker with an inflation so big it swallows the whole teat.) When you hang the Perfection on a cow, you hang the pail in perfect balance and it stays that way from start to finish.

Because a cow milks hardest when you first start to milk, adding more weight on the udder as you milk shouldn't be necessary. With a Perfection you don't need to have it pull harder and harder on the udder as milking continues. The surcingle strap need never be pushed forward to throw more weight on the udder with the possibility of injury.

Find out more about the Perfection Suspended Milker . . . Write for free literature or ask your dealer for a 10-day free trial.

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A subsidiary of Perfection Mfg. Corporation
Minneapolis 13, Minnesota

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2133 East Hennepin, Minneapolis 13, Minnesota

Please send me your folder describing the Perfection Model 84 Suspended Milker

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Prevent corrosion on irrigation pipes

Corrosion on irrigation pipes can be prevented if the inside of the pipe is painted with one of the three materials now on the market.

by William G. Schulz

AFTER two years of extensive research, Washington State College chemists have solved the long-puzzling problem of what causes corrosion of aluminum irrigation pipe. Further, they have found effective remedies to prevent it. They recently completed field tests on farms and ranches throughout the state under practically all water and usage conditions.

Several factors combine to cause such corrosion, says Dr. Mark Adams, who headed the investigation. The chief one, he reports, is a combination of materials dissolved in the irrigation water and associated with its free carbon dioxide.

Other major contributing causes are the total amounts of solids present in the water and its degree of acidity. All of these combine to eat away the protective oxide film on the inside of the pipe. Once there's a break in that film, corrosion of the metal follows quickly.

The most effective preventive, they found, is to treat the inside of the pipe with any one of several coatings or paints now available on the market under commercial brand names. Three were found to give best results: the zinc base chromate type, the gilsonite type, and the metal etch primer.

These findings should be good news to irrigating farmers throughout the country; for irrigation is no longer confined to arid or semi-arid regions, but is used in many humid areas as a supplement to the natural rainfall. It is especially popular with dairymen for their pastures. Pipeline corrosion, with many farmers, has been a serious and sometimes costly problem.

How the farmer manages and operates his sprinkler system also was found to have an important bearing on the incidence of corrosion. Thus: whether or not water pressure is kept constant in the system; different irrigating methods and procedures, varying from farm to farm; and whether the pipeline is drained seldom or often. It was found, for example, that pressure of water standing in the pipe for long periods definitely promotes corrosion.

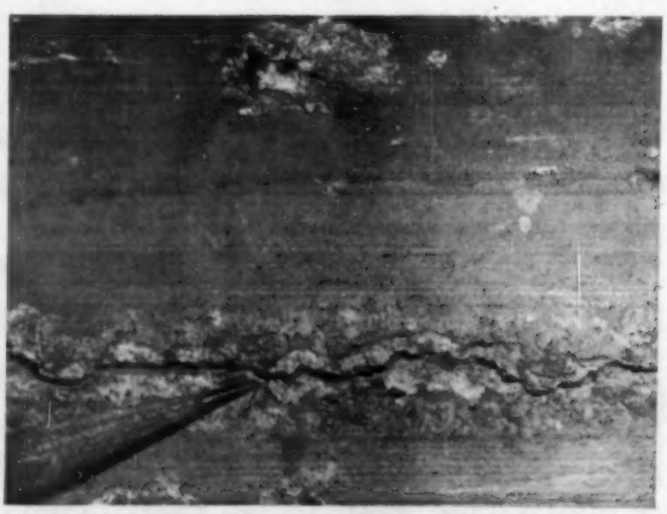
It was also found that the mainline, more often than the laterals, was subject to corrosion. This, probably, is because the laterals are drained and dried more often and at regular intervals, Dr. Adams points out.

These findings can now be put to practical use in helping farmers who use sprinkler irrigation. It is simply a matter of making chemical analyses of the water source, though these should be made only by a trained chemist who knows what to look for. Also important is a check on the farmer's irrigating methods and the management of his equipment. On the basis of such tests, chemists can:

(1) predict what water sources or types will most likely cause pipe corrosion and how severe it will be; and (2) tell farmers whether or not to undertake the expense of preventive treatment of the pipe, and, if so, what coatings to use.

As the research on irrigation pipe corrosion continues, even better, cheaper and easier preventive methods will be developed, Dr. Adams states.

Cooperating in the study are irrigation equipment dealers, the Reynolds Metals Co. and the Kaiser Aluminum and Chemical Corp.

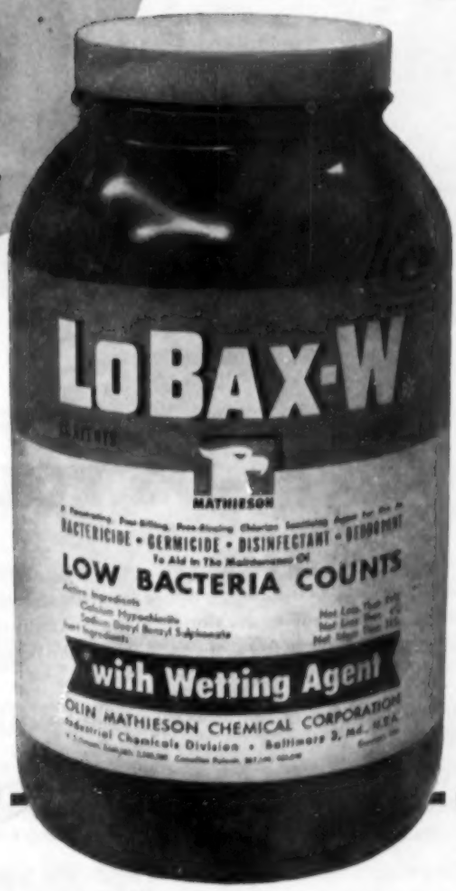


CORROSION IN PIPES after being used for only two seasons was caused by bi-carbonate water from the irrigation wells. These corrosion areas are kept alive by dissolved salts in well water.

BLITZ BACTERIA WITH

THE CHLORINE BACTERICIDE WITH A WETTING AGENT

LoBax-W is packed in handy 2½-lb. bottles with replaceable screw caps. Each package is accompanied by full directions for dairy sanitation as well as other farm uses.



For faster, more effective germ-killing action, LoBax-W sets the pace. This modern, dairy chlorine bactericide combines chlorine with a wetting agent to penetrate invisible surface films and give killing-power where it counts.

This combination of properties makes LoBax-W the choice of leading dairymen everywhere:

1. LoBax-W is a fast killer—the presence of a wetting agent helps bring the fast-killing chlorine in LoBax-W solutions quickly in contact with all surfaces to be sanitized.
2. LoBax-W is fast-dissolving—saves time and effort.
3. LoBax-W solutions rinse freely—less chance of milkstone formation.
4. LoBax-W solutions are exceptionally smooth and easy on milkers' hands and on cows' sensitive teats and udders.

LoBax-W is inexpensive too. One teaspoonful makes two gallons of rinse solution containing 100 ppm of available chlorine at a cost of about one-half cent. The loss of only one can of rejected milk could pay for an entire year's supply of LoBax-W.

Lo-Bax Special—Contains 50% available chlorine in dry, free-flowing form. Dissolves quickly in water, hard or soft, hot or cold, to make clear, fast-killing rinse solutions. Harmless to cows' udders and milkers' hands.

Write today for complete information and samples.

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Please send information on Lo-Bax Chlorine Bactericides and the name of my local supplier.

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Can you spot the BIG LOSER on this scorecard?

★ TRANSPORTATION SCORECARD ★
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INTERCITY TRUCKS
INLAND WATERWAY CARRIERS
AIRLINES
INTER-STATE BUSES
Does carrier build and maintain the "roadway" which it uses?
Does carrier pay property taxes on its "roadway" for support of the general services of government?
Does carrier meet all its true costs instead of being helped by tax money?
Is carrier compelled to maintain routes and services which do not pay their own way?
Are carrier's rates regulated by government agencies?
YES
NO
SEE NOTE #3
#1. Any mail-carrying commercial airline which operates at a loss receives additional Federal subsidy to cover its deficit.
#2. Only 38% of intercity truck transportation is regulated, in part, by the Interstate Commerce Commission.
#3. Only 12% of inland water transportation service is regulated to some extent. Water carriers enjoy special protection from railroad competition.

Look closely—it's YOU!

Most of the things you enjoy in your daily life—your home, your car, your clothes, the food you eat – are available to you in such quantity because America enjoys the world's greatest system of mass transportation. And the better that system works, the better for *you*.

But when that system is not permitted to work at its best, it is *your* loss.

As you can see from this scorecard, only the railroads among these transportation agencies are meeting all their true costs without help from tax money.

And yet, railroads are subject to such laws and regulations, both in their rates and in their services, that they are not allowed to compete with other forms of transportation on an equal basis.

This costs *you* money in two ways – in higher taxes and in higher *real* costs of transportation.

You can help get lower *real* costs – and lower taxes, too – by supporting measures, state and national, which will put all forms of transportation on an equal basis—and which will give America's railroads freedom to compete.

Association of American Railroads
WASHINGTON 6, D. C.

FEEDING

by N. N. Allen

From the mail bag

Beet pulp is a good dairy feed . . . Whey will not harm dairy cows . . . A variety of proteins in the dairy ration is not particularly important . . .

DURING the winter months, there is a little more spare time on the dairy farm. This is reflected in the large number of letters which we receive. These letters bring many interesting questions on a large variety of feeding problems. Here are some samples which may be of interest to others as well as the writers.

Feeding without corn-oats . . .

This one comes from Wisconsin, and asks how cows can be fed without using corn and oats in the grain mix. In the corn belt, dairymen are so used to having plenty of home-grown corn and oats that they hardly know how to feed without it.

Most of the other farm grains such as wheat, barley, rye, or the grain sorghums will serve the same purpose where they are economical to raise or buy. These or such low-protein feeds as beet pulp and hominy feed may replace corn and oats, pound for pound, without much effect on the feeding value. However, this may not be the best way to work it out.

With plenty of home grown grain, the feeder needs only to buy a little protein to balance out the ration. Usually the most economical way to buy protein is in the highest protein feeds such as the oil meals. But when we are buying energy as well as protein, some of the medium protein feeds may be a better deal.

If such feeds as bran or middlings are used in place of the grains, they will furnish more protein, so we will not need as much of the high protein meals. Or we may find a saving by leaving them out entirely and using the medium-high protein feeds instead. These include brewers grains, malt sprouts, distillers dried corn grains, corn gluten feed, etc.

The thing to do is to figure out mixes using the feeds which you can buy to best advantage, then compare costs. Cows will make just as much milk on a lower cost mix as long as it has the same amount of protein and T.D.N. and the profits for the feeder will be greater.

It is not hard to work out the rations, if we use a simple plan such as was outlined in this column in a previous issue. This plan is also given in more detail in Circular 467 of the Wisconsin Experiment Station at Madison.

From Colorado comes a question on the value of molasses beet pulp as compared to farm grains. The difference in feeding value of beet pulp, either plain or molasses, and corn or oats is not enough to worry much about.

Like the grains, beet pulp is low in protein, but high in energy value. It is bulkier than the grains, and is very palatable.

Beet pulp is a good dairy feed, and if it is cheaper than the farm grains as it may be in the area of beet sugar factories, it may be used to good advantage in any amount desired in the ration as long as protein and phosphorus are supplied by the other feeds.

Whey for dairy cows . . .

A Texas reader wants to know if whey from cottage cheese is worth feeding, and if it is safe to feed to dairy cows. He has heard that the acid in it will keep the cows from coming in heat.

The whey certainly will not harm the cows. They get lots of similar acids from silage, and they also produce a great deal from the fermentation of roughages which takes place in their first stomach. If these acids do not interfere with reproduction, there is no reason to expect that the acid from the whey will do so. There are some other angles, however.

It will take about a gallon and a half of whey to equal a pound of oats in feeding value. This means that we would have to get a lot of whey into a cow if it is to supply any substantial part of her needs.

We doubt whether many cows will drink whey without special effort to teach them to do so. It could be fed in fair amounts by using it to soak beet pulp or citrus pulp. Molasses would help to make it more palatable to the cows.

So we would say that it is up to the feeder to decide whether it is worth the effort. It does not have nearly the feeding value of skim milk, which is much higher in protein and minerals.

Variety of proteins best? . . .

A feed dealer from North Carolina asks about the value of a single protein as compared to a variety of proteins for cows. We used to hear a great deal about the importance of having a variety of proteins in the ration so that the cows would be sure to get all of the different amino acids which they need. However, the cows never seemed to be very fussy about this as long as they got enough protein.

They seemed to differ in this respect from the simple stomached animals, and now we can understand why. The bacteria in the paunch take much of the feed protein apart and put it back together in the form of different proteins with different amino acids. And they seem to do a pretty good job of providing all of the essential amino acids to balance out the needs of the cows. So, within reasonable limits, at least, we can say that the cows will do all right with no more variety of proteins than they get from their roughages and concentrates as long as they get enough protein.

This same man asks what minerals the cows will need in addi-

tion to those which they get from their regular feeds. This will all depend on what their regular feeds are, and the soil on which they are grown.

In many cases they will need only salt. If their roughage consists of non-legumes, grown on soils which are very low in lime, they may need some additional lime. On farms where the soil is low in phosphorus, this mineral is more likely to be a problem.

Phosphorus deficiency is much more common in dairy cattle than is calcium deficiency. Any supplements which are ordinarily used to insure against a phosphorus shortage will also supply plenty of calcium.

Iodine, cobalt, iron, and copper shortages have been reported in some areas. A few isolated cases of lack of magnesium have been reported.

Only three or four other minerals are definitely known to be required by cattle, but no cases have ever been reported where the ordinary feeds failed to supply enough.

Your county agent or the dairy cattle specialists at your college of agriculture can tell you whether you are in a problem area for any of the minerals. We can find no support for claims of widespread 'border-line' deficiencies of minerals in our dairy herds, which are blamed for all sorts of breeding troubles and other ailments.

Make the herd bigger?

With lower milk prices, many dairymen would like to milk a bigger herd to keep up the income. But more cows would often mean adding to the barn, and building costs are out of sight. Then it would take more work, which would mean hiring help, so it just does not seem practical to increase the herd.

There is a way that any herd can be made bigger without adding to the barn or hiring more help. We do not have to milk more cows to make the herd and the income bigger. It can be done with the same number of cows. Here are some ways to do it.

1. Milk healthy cows. Cull out the unsound ones as rapidly as sound healthy heifers are ready to replace them. Then keep them healthy and sound by a good health program.

2. Breed and select for inherited ability for higher production. Through artificial breeding organizations, good sires are within the means of most dairymen, regardless of the size or breed of the herd.

3. Give the animals good housing and care.

4. Do a better job of feeding. There are not very many herds that would not produce more milk with a little more care in feeding. It is much more profitable to increase production 10 per cent by better feeding than to increase the number of cows by 10 per cent.

When we add more cows, it requires more barn space, more labor, and more feed going into the overhead of maintaining the bodies of the cows. By better feeding, we can get the extra milk to keep up the income without more barn space or more help.

In most cases, all that is needed is to give the cows more of the same feed that is now being used. It never pays to add more cows until we have made the herd as big as we can by good breeding, feeding, and management.

The discovery of Vitamin A in 1913 by Dr. E. V. McCollum in Wisconsin paved the way for nutrition research that has established milk and dairy foods as unique in the human diet, according to the National Dairy Council.

CORN CENTER DOIN'S

"Oh Paw, ya didn't forgit our anniversary, didja. Them big, new B. F. Goodrich Power-Grip tires is purtier than the washtub ya got me last year!"

You'll work more land in less time with powerful, new B. F. Goodrich Power-Grip tires on your tractor. The big Power-Grip tread is wider, and time after time you'll find that in the same size this B. F. Goodrich tire has more cleats than other leading makes of tires. Power-Grip cleats are higher to penetrate deeper. You get full traction in reverse or forward, maximum pulling power even in rough going. And Power-Grip cleats are reinforced at the base to stand rigid on hard surfaces. The tread wears longer, gives you more service for your tire dollars. Get all the power out of your tractor that was built into it. Mount it on B. F. Goodrich Power-Grip tires. See them today at your B. F. Goodrich retailer's (the address is listed under Tires in the Yellow Pages of your phone book) or write *The B. F. Goodrich Co., Tire & Equipment Division, Akron 18, Ohio.*

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BARN CLEANER MANURE SPREADER

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ORIGINAL **PATZ LINK**

- Above link used as the Patz Barn Cleaner chain and Patz Manure Spreader apron chain.
- Originator of the pitless barn cleaner time tested and tried on thousands of barns in the dairy states and Canada.
- Barn installations can be made in all types and shaped barns. Conventional 2 gutter—4 gutter—L and T shaped.
- P.T.O. driven Manure Spreader with 140 bu. capacity.
- All movable shafts mounted in either flange or pillow block ball bearings.
- Beater bar and wide spread unit detachable so box can be used for other purposes.

- Patz Silo Unloader made to operate in corn or grass silage under all climatic conditions.
- Patz Blower Clamps made to fit all sizes of standard pipes. Just a flick of the wrist and they are on or off. No more fumbling with bolts and nuts.
- Farmers—Dealers—we invite you to write us for information and literature on all Patz equipment.

PATZ COMPANY

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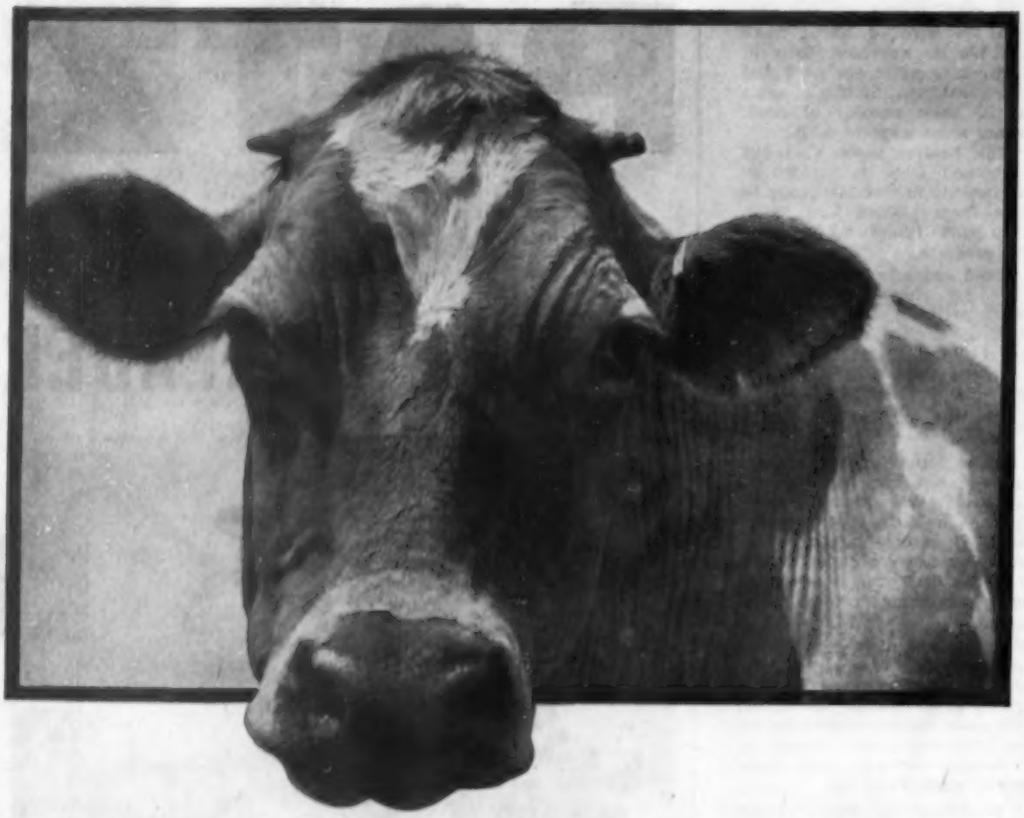

NOW—all year 'round—fresh, sweet silage cows are crazy about

This year—all year 'round—you can be sure of having fresh, sweet-smelling grass silage that your cows will love. And you can get it with never a worry about spoiling.

Instead, your silage will have a green color. It will be packed with valuable nutrients—especially carotene, which gives rich, yellow milk with plenty of vitamin A.

You can get grass silage like this by using the remarkable new material which you have been reading about in current newspapers and magazines.

MEDO-GREEN is its name. (Chemists call it sodium meta-bisulfite.) High-purity MEDO-GREEN is made by Monsanto Chemical Company, which also makes DDT, 2,4-D and other farm chemicals you've come to rely on.

Easy to Apply . . . MEDO-GREEN is a clean, free-flowing powder. There's no sticky, gooey liquid to slow you down. No complicated valves and hoses to bother you. No special labor or extra man required.

Instead, you add sparkling white MEDO-GREEN to your grass silage quickly and without fuss. All that's needed is equipment you probably have. The fertilizer attachment from the corn planter, for example, can do the job perfectly. You just add the MEDO-GREEN and it does the rest, giving a conditioning effect similar to sulfur dioxide. Commercial applicators are also on the market.

Low Cost—You need only 8 lbs. of Monsanto's MEDO-GREEN per ton of crop. And since you don't use as much, you save time, money and work. Have your supplier figure the cost for your crop.

Cows Go For It . . . Cows are crazy about silage treated with Monsanto's MEDO-GREEN, too. How do we know? From actual feeding tests on two-year-old heifers. These tests show a preference of more than *three to one* in terms of actual eating for sodium meta-bisulfite treated silage over untreated silage.

High Nutrient Value...So cows like MEDO-GREEN. Is it good for *them?* The results of carefully conducted digestion tests showed that *in every case* sodium meta-bisulfite treated silage was *significantly superior* to nontreated silages with respect to digestible dry matter and total digestible nutrients.

Silo Tests . . . Other tests were also conducted in wooden, concrete, and steel silos under the supervision of a leading agriculture station. In all tests, farmers whose silos were used reported greater economy, easy application, less nutrient losses.

Get MEDO-GREEN now at your favorite feed supplier.

MONSANTO CHEMICAL CO., Inorganic Chemicals Division, 710 N. 12th Street, St. Louis 1, Mo.

Ask your dealer for MEDO-GREEN, Monsanto's Sodium Meta-Bisulfite, Silage Grade.

MEDO-GREEN: Reg. U. S. Pat. Off.

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SODIUM META-BISULFITE

Silage Grade

MONSANTO CHEMICALS - PLASTICS

SERVING INDUSTRY... WHICH SERVES MANKIND

They do, too, have cows in Florida

(Continued from page 285)

Many Miami dairies have no pasture, feed practically no roughage, buy and sell cows constantly. Naturally, only a favorable market situation could support such an economy, but the Miami market is strong. Efficient distribution methods make possible the delivery of a clean, fresh milk at 26 cents per quart delivered or in the stores, while paying producers probably the nation's highest prices.

Farther inland and north of Miami one finds another kind of Florida dairying. Beneath Lake Okeechobee is a new agricultural area. Twenty-five years ago this land was mostly "saw grass and alligators" like the Everglades. Today, after drainage and dike-building operations, it provides enormous tracts, which will grow many commercially-valuable crops under the carefully-controlled water conditions the dikes make possible.

For a nominal sum per acre, the water authorities guarantee to maintain the table level at a certain depth. Each farmer may then pump from his canals to either flood or drain his own land according to his needs.

Typical of the new dairymen in this new dairy region is William Bixby, a young and enthusiastic newcomer both to dairying and to Florida. Starting with 640 acres, half unimproved pasture and half saw grass, etc., Mr. Bixby has cleared brush, planted pine trees, dug canals, killed weeds, and seeded tropical grasses and legumes. He has built a milking room, two houses, a machine shed, shop and calf shed, strung miles of fence and put together a producing dairy herd in three years' time.

He sells his milk wholesale and milks 75 cows. He also maintains a herd of 60 beef heifers.

There is a key to raising roughage in the Lake Okeechobee region. As yet, young Bixby and his neighbors haven't found it, although they've come close. Their white Dutch clover stands are substantial in season, and their grasses are first-class. Nevertheless, their season is long and productive; drought is unknown; their land and tax costs are only a fraction of the Miami region. Feeds other than roughage are available in quantity at reasonable prices. It is a good place to make milk. When the roughage key is found, it will be ideal.

Perhaps the key will be Hubam clover, or Crotalaria, or Alyce clover. Para, St. Augustine, Bahia, Carib, and Pangola grasses all do well in turn and perhaps a combination of these will be the answer.

In this area there seems to be a dormant season for grasses, regardless of temperature or water conditions. But during the wet season, grasses grow splendidly and perhaps silage can be made to last over the dormant months. Hay, even with dehydrating equipment, is not a practical possibility.

Citrus pulp, however, is available as low as $30 per ton. Molasses from the nearby sugar mill is a wonderful buy (Mill run—$19.06 per ton. Urea fortified molasses, 16 per cent protein guaranteed—$28.06 per ton) but Mr. Bixby mentions a point overlooked by many; everyone says molasses is a bargain but no one offers any ideas as how to feed it. (In big quantities, handling molasses can be a very sticky operation. He has a tank on wheels and

feeds from a trough, but says he feels this can be improved.)

Two to three men milk the 75 head and could handle more. A bulk tank receives milk from glass pipes and is picked up by tanker and taken to Miami every other day.

Handling calves is something they have learned. Calves are best raised on clean ground, with plenty of air and no drafts, clean utensils, and medication.

Of note is the small amount of machinery needed for Florida dairying. All young Bixby uses (in addition to the parlor milking equipment) is a tractor, disc, drill, rotary mower, and truck. Eventually, a field chopper may be added.

There is yet another system of dairying in Florida, in some ways stranger than either the Miami or Clewiston operations. A dairy region is shaping up around Orlando in the "muck" area beneath Lake Apopka. Here, like Clewiston, a water commission has been formed and land drained by canals. Locks control the table level and as a result, again we find a region with almost no water problems.

Of course, ideal water conditions bring truck farms in their wake, but at Orlando, a strange coincidence provides not only perfect water but on many acres, a "muck" soil which is almost unbelievable. Ten to twenty feet thick, this jet-black, fine-grained muck is almost 100 per cent organic in composition. It is a true peat and it will burn when dried.

In this material, vegetables of all kinds grow in tremendous abundance all year round. It is perhaps one of the most productive 12-months-per-year farming regions in the world, providing laboratory conditions in great flat fields of 80 acres and up.

On such valuable land, no one ever dreamed of raising dairy cattle, no one that is except A. J. Rusterholz, Jr., a successful Vermont dairyman and cheese manufacturer who came to Orlando only three years ago.

Mr. Rusterholz saw the muck land and saw the possibilities for dairying if only roughages could be produced in quantity. Knowing what Holsteins could do with roughage, and doing some figuring in advance based on the milk market of the area, Mr. Rusterholz concluded that if good roughage could be grown on the muck, dairying could compete dollar-for-dollar with truck crops.

It hadn't been tried before, and neighbors warned against the gamble. Pasturing cattle on the muck was supposed to have been impossible. It would make the cows sick. They would get foot rot. They would bloat.

Mr. Rusterholz didn't ignore these warnings, for generally such local ideas have reasoning behind them which outsiders may not understand. But he did go so far as to invest in some of the muck land and, after raising a fine crop of white Dutch clover, he put beef cows on the land to graze.

They did not get sick; nor did they get foot rot; nor did they bloat. They got fatter and fatter and have since turned out three calf crops for him. As a result of this experiment, he expanded his holdings to 450 acres, mostly muck but with just enough sandy soil to allow a place to build his dairy.

First, he experimented until he discovered that tropic oats will grow so fast and so thick it can be cut for green feed in 60 days after seeding. It will provide six to eight tons of green feed per acre, two cuttings per year, remaining green from the time it's planted in October clear through combining what's left in June.

He combined Alta Fescue with white Dutch clover and built pastures and meadows. He fertilized and inoculated. The result was a 12-months-per-year growth so thick one could almost walk on top of it. The white Dutch clover turned out so verdant, deep, and lush only a trained agronomist would have recognized the crop.

Yet it was neither coarse nor unpalatable. It not only fed to fatness Rusterholz's own beef herd and the beginnings of his dairy herd; neighboring farmers ran out of roughage and brought in their animals as well. He pastured a total of 450 head on 240 acres of his mixture for 365 days.

For 180 days this one seeding fed a maximum of 3 head and a minimum of 2 head per acre. And no animals just "kept alive." Every animal gained, dairy cows as much as 200 pounds per cow and beef cattle as much as 250 pounds in 120 days.

This land will also raise alfalfa, not ordinary alfalfa but the greenest, finest, most beautiful alfalfa ever grown. However, unlike the clover mixture, alfalfa won't grow all year down there and Mr. Rusterholz can't figure why. Two cuttings per season seem to be about maximum.

If the secret to all-year alfalfa is found, this will settle forever the question of whether cow-feed will compete dollar-wise with radishes, celery, and spinach.

Rusterholz is milking 100 cows right now. He expects someday to have 500. The land will feed them. Clipping and feeding green oats and pasturing his 12-month clover, adding dehydrated alfalfa whenever he feels it's needed, he can handle 500 cows easily. He feeds only one pound grain to six pounds milk, with savings in feed costs the average grain-conscious Florida dairymen could hardly find credible.

He uses a milking parlor and bulk tank and turns out a fine quality milk product.

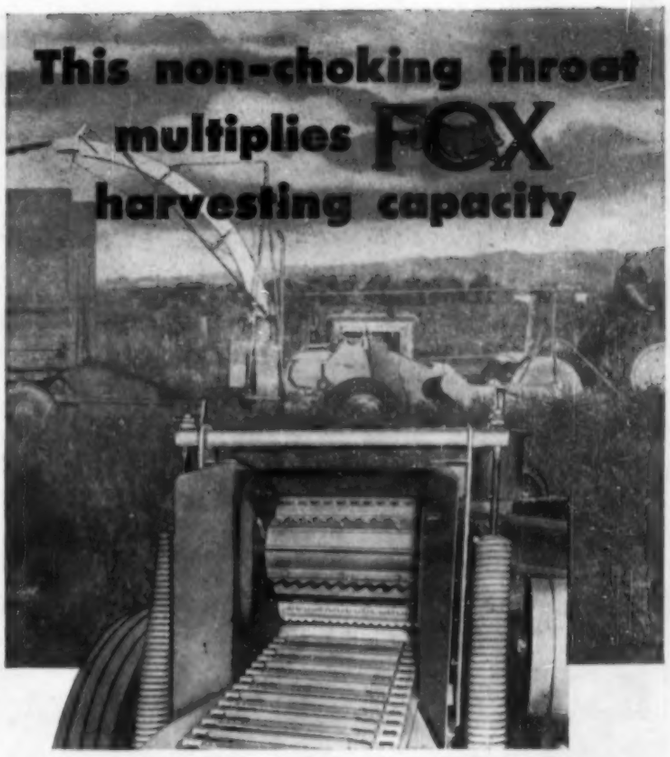
As to breeding, Mr. Rusterholz is as anxious as anyone could be to develop an even finer herd, especially now that he has the home-grown feed to take advantage of good inheritance. He has a fine young Holstein bull, and a number of sound registered cows of high test for Holsteins.

As far as labor goes, Rusterholz's operations are like the others in the area. He figures one man to milk 50 cows and operates an 8-unit parlor with two labor shifts.

For many years, dairying has been moving Southward. First the big shift came as tobacco and cotton lands wore out and were replaced with grass to raise beef and later dairy cows. Higher incomes in the South resulting from more industries and bigger payrolls meant more milk demand, and markets in the South are generally good today even as they have fallen elsewhere.

Meanwhile, Florida beef sprang into prominence, and citrus pulp and cafeteria style feeding of trace elements played their roles. Now, perhaps we're seeing the last chapter, the coming of a highly-developed dairy cow economy in the land of the palm tree. A new day is coming and the Boyds, Bixbys, and Rusterholzes are perhaps typical of what will be.

In years to come it is a safe bet that Florida, land of 12-month pastures, lush legume forage, low feed costs, efficient milk-handling, strong markets, and a happy home for cows and dairymen, will take her place among the leading dairy regions of the nation. THE END



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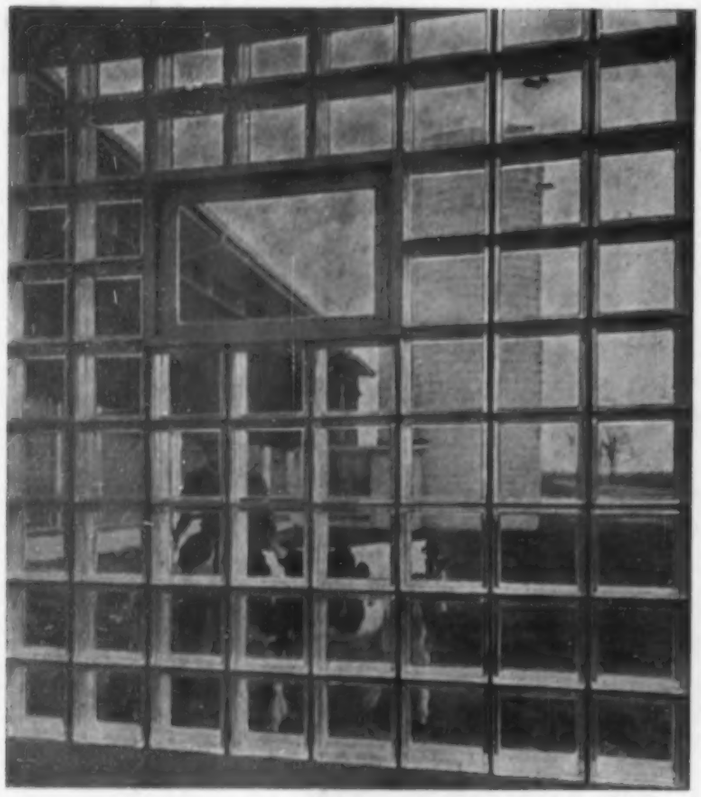

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Exploded theory . . .

Milk is Milk

whether cows are fed from fertile soil or poor soil

REMEMBER the vocal theorizing about 10 to 15 years ago? We were told that better soils produced not only more but higher quality crops. Further, these high-quality crops, when fed, brought us healthier cattle. And more important, the quality of animal products was probably improved, too!

The stories we heard were all so logical. Could it really be true that some milk was better because of the land from which the cows were fed? Conversely, was some milk inferior? Now there was a disturbing thought.

Weighing the seriousness of the conclusions being drawn, the National Dairy Council, with funds provided by the American Dairy Association, helped finance a major long-time research project at Michigan State College. There, scientists from the dairy, farm crops, soil science, agricultural chemistry, and foods and nutrition departments developed an exhaustive experiment 10 years ago. It has continued to this day and will be completed formally in June.

At a recent celebration of Michigan State's centennial, however, the conclusions were announced. Commemorating the founding of the nation's oldest Land Grant College, researchers stated in effect:

Milk is milk, whether cows are fed from fertile soil or poor soil.

How did they reach this conclusion?

A 210-acre, badly depleted farm was obtained near the College's Kellogg farm in Kalamazoo County, Michigan. No crops had been grown on the land for 25 years and the soil was so poor only low-quality plant life would grow.

Eighteen 10-acre fields were laid out on the farm. A good fertility program was outlined for those plots designed to get fertilizer. Fertilizer application was not heavy, however. A total of 5,000 pounds of 0-12-12 per acre was applied along with some nitrogen top-dressing. That is an average of 500 pounds an acre each year. On the unfertilized area, no mineral fertilizer was added but nitrogen in the form of ammonium nitrate and urea was used in order to get crops large enough to harvest with farm machinery.

Two herds of cattle, composed of pairs of half sisters, were provided, one sister to each herd. All heifer calves were saved and left in the herds. More than 100 calvings resulted and three generations of calves produced milk used in the tests.

Since no alfalfa or clover could be grown on the acid, depleted soil, brome and timothy hay was grown on both the unfertilized and fertilized land for a fair comparison. Grains grown included winter wheat, oats, soybeans, and corn.

Regular chemical analyses of the crops, as they were fed, and of the milk and blood of the cattle were made. Records of feed eaten, milk produced, breeding and reproduction, and rate of gain were kept on both herds. Samples of milk were taken regularly and fed to colonies of rats to determine the actual feeding value of milk.

Findings—about milk . . .

(1) The consuming public can be assured that milk produced by cows that subsist on feeds produced on fertilized or depleted land is equal in nutritive value. If a cow's ration is low in protein or minerals, milk production will be decreased, but composition of milk will remain the same.

(2) Milk produced by both groups contained as much or more fat, protein, and mineral constituents as are commonly found in market milk.

(3) The amount and kind of amino acids in the milk proteins were similar, regardless of whether the feeds were grown on fertilized or unfertilized soil.

(4) Vitamin content of the milk produced showed no differences attributable to the feeds. Low levels of carotene and Vitamin A were evident. However, this was due to the fact that none of the cows had access to pasture. The values were similar for both herds.

And—about crops . . .

(1) Badly depleted soil produces feeds that are just as nutritious as the same kind of feeds grown on fertilized soil. The assumption that commercial fertilizers either increase or decrease the nutritive properties of crops was not substantiated.

(2) There is little difference in the chemical composition of cereal grains that can be attributed to fertilization when these grains have grown to maturity.

(3) The composition of forage crops that were harvested for hay was found to vary with the type of plant species and stage of maturity in response to fertilization.

(4) Seasonal differences appeared to have far more influence on the composition of crops than fertilizer treatment.

The study also explored the effects of the feed on health, growth, breeding efficiency, feed intake, and milk yields of the cows.

Reproduction of animals was not affected by soil fertility according to research results. Birth weights of the two breeds of cattle used for the test groups were not significantly different, except for bull calves of one of the breeds which averaged 11 pounds heavier in the "unfertilized group."

Breeding efficiency was not significantly different in either group.

No important difference was found in growth of heifers.

A significant difference in milk production in the case of cows of one of the breeds which favored the group on unfertilized feeds indicated greater appetite for, and intake of, unfertilized feeds rather than the ability of the feeds to support milk production. No important difference in production of the cows of the other breeds was observed.

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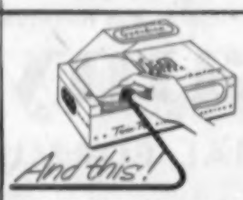

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Cows have tumors, too

Few humans appreciate that domestic animals have tumors, too. Cows apparently are more frequent victims than any other large domesticated animal.

by James R. Wadsworth, D.V.M.

SINCE the dawn of civilization man and animals alike have been victims of tumors. Today, multiplied thousands of people seem to be cancer-minded.

Few of us, however, are aware of the great variety of tumors which can affect domestic animals, particularly dogs. Indeed, no animal—domestic, captive, or wild—is immune to tumors. Yes, cows have tumors, too! They are probably the victims of tumors more frequently than any other large domestic animal.

The word "tumor" means swelling, but not all swellings are tumors. A neoplasm, or tumor, is an independent new growth of tissue. It starts and grows spontaneously, does not serve any useful purpose to the body, and reaches no definite termination for its growth.

A tumor is lawless in nature and develops at the expense of normal body tissue. It has no function. Tumors are either benign (harmless) or malignant (deadly).

Harmless growths are usually not fatal unless they produce excessive pressure or stoppage to a vital organ or part. On the other hand, malignant (or deadly) tumors continue to grow and always kill in time, regardless of their location in the body.

The growth of all tumors results from the multiplication of their own cells. We do not know why certain body cells suddenly assume an independent existence and thereafter produce tumors. It is one of the most baffling conditions.

Tumors vary in size from tiny nodules to huge growths of unbelievable dimensions. They may be round in shape with irregular surfaces. Many have a short neck (peduncle) by which they are attached to the body.

The color of a tumor depends upon its blood supply as well as the presence or absence of pigment in its cells. In addition, tumors may be soft in consistency or firm with capsules surrounding them.

Contrary to popular opinion, we do know something about the many possible causes of tumors. Certain conditions are necessary for the formation of these enlargements, such as cell division, tissue formation and growth. Various outside forces are known to incite the growth of tumors. Mechanical, chemical, thermal, radioactive, and infective agents play important roles in the origin of tumors.

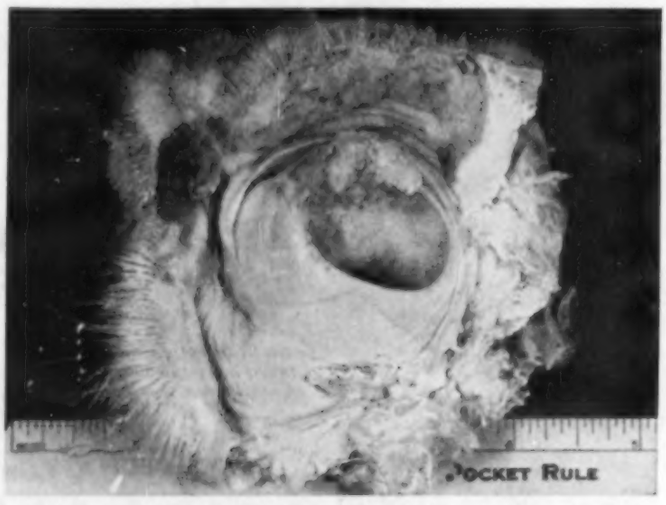
Most tumors in cows occur in older animals. Most frequently such animals are sold as "canners." Statistics show that the cow's liver and rumen are most frequently affected with tumors. Commonly, the ovaries, lungs, intestine, and udder are likewise involved.

Some time ago, Dr. Ray H. Bradbury of Mount Vernon, Washington, reported an unusual tumor from an 8-year-old Holstein cow. The animal began to show symptoms of nymphomania three months after calving. Her milk production dropped and she developed irregular heat periods. Her neck became thicker than normal and her voice was deep. She would mount any animal available and even charged viciously at the owner.

Within a period of a few weeks her stomach enlarged, suggestive of pregnancy. A huge, firm mass could be felt in the flank region. At slaughter, a giant right ovary was discovered, which weighed 21 pounds. This ovarian tumor was not malignant. Nevertheless, it is unlikely that this animal would have lived very long.

I have in my collection a monstrosity tumor from a Holstein cow. It is called a teratoma. The cow gave birth to a large, round mass about the size of a grapefruit. It was completely covered with black and white hair.

The author is assistant animal pathologist, University of Vermont.



CANCER OF THE EYE. Tumor involves cornea of the eye as well as eyelid. Photo courtesy of Dr. C. C. Morrill, Univerity of Illinois.

When sliced in half, this mass revealed a conglomeration of body tissues and organs. Here was a piece of bone, a portion of liver or lung, and some kidney tissue nearby. A normal calf had never formed. Instead, all of the growth processes had become hopelessly abnormal and a ball of tissues and organs had been expelled.

Cancer is relatively common in animals and cancer of the eye is by no means rare in beef cattle, especially Herefords. Friction results as the tumor and the eyelid constantly move. Perhaps tumor cells become dislodged and the growth spreads to other parts of the eye. Thus, the entire structure of the eye may become involved and the case is utterly hopeless. However, if the growth is limited, the tumor can be surgically removed.

Unless the animal is valuable for breeding purposes, slaughter is recommended when the entire eye is tumorous.

Skin warts are commonly seen on cattle. They are called papillomas and merely represent projected growths of the skin with a hard surface. These small skin tumors may appear almost anywhere on the body. Often they are extremely numerous.

It is well-known that warts in cows are caused by a virus for which a commercial vaccine has been prepared. Usually the warts shrink and drop off within one or two months after an injection of wart vaccine.

We are all aware of the moles or beauty marks so commonly seen on the skin of many people. These growths contain a brown pigment, melanin, and, as tumors, are called melanomas. Such tumors are indeed rare in cattle.

However, over 30 years ago Dr. W. L. Boyd of St. Paul, Minnesota, described a large, malignant melanoma in a 4-year-old cow. It was first noticed when the animal was still a calf. The growth slowly became larger as years passed. This tumor was surgically removed and the cow later had three successful pregnancies.

Yes, cows have tumors, too! We have not mentioned the scores of tumors which affect bulls. Even calves are occasionally victims. The study of tumors is an intriguing phase of veterinary medicine. We have seen tumors in every species of domestic animal, in captive zoo animals, and even in snakes.

Perhaps our study of animal tumors will benefit human cancer research. Let us hope that we shall be able to make some small contribution to this realm of medicine.

Need tasty treatment

Common household detergents may be the key to bloat control, but first they'll have to be made to taste better.

That's the conclusion of R. E. Nichols, veterinary scientist at the University of Wisconsin, after a survey of some 40 farmers over the state who tried detergent compounds on about 1,400 cows last year.

The compounds called alkyl aryl sulfonates (the basic material in many household detergents) seemed to control bloat in most cases. But many farmers reported difficulty in getting the cows to eat the material.

The compound was either sprinkled on top of the cow's daily feed, or mixed in salt blocks. When placed in salt blocks, many cows didn't eat enough salt to get enough of the compound.

Nichols thinks the problem right now is making it easier to get cows to eat the powder. He is going to try mixing it with molasses, saccharine, and licorice to mask the bitter taste.

In the field tests, 9 of the 40 farmers were enthusiastic about the good results. A larger group, 15 farmers, gave qualified approval—holding back mostly because of difficulty in getting cows to eat the material. Only 3 or 4 farmers seemed displeased, and their complaints were based on the cow's dislike of the detergent compounds.

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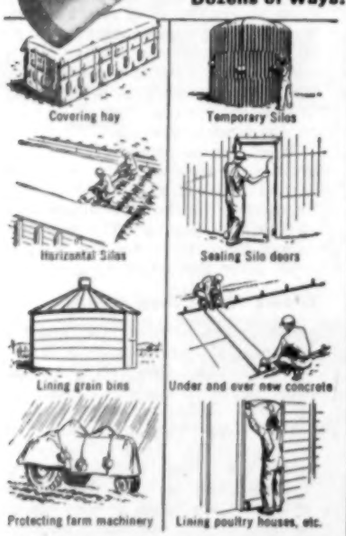

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A 4-16-16 STARTER fertilizer was applied to the healthy corn on the left. The short, sickly looking corn on the right received no starter but 10-10-10 was plowed under before the crop was planted.

Fertilized corn beats the weeds

A starter fertilizer high in phosphorus gives your corn seedlings a boost that gets them started well ahead of the weeds.

by R. L. Cook

GRANDFATHER, and perhaps Father, depended largely on the cultivator and the hoe as tools for keeping the corn field free of weeds. Time was not so important because labor was cheap and men on the farm were used to long days. In today's machine age, the man with the hoe is too much of a luxury to be used in the corn field. Anyway, he is no longer needed.

Grandfather was told to plow in the fall or early in the spring, then harrow frequently until planting time, and by so doing, kill the weeds before the corn was planted. This sounded logical, but it didn't work. The weeds were still there.

Chemical weed killers may be used to avoid much of the labor of weed eradication. The chemicals cost money, however, and special equipment is needed. Furthermore, a variety of weeds may require more than one chemical for a complete job.

In the modern ways of tillage, described by Hoard's Dairyman in the issue of March 25, 1953, planting immediately after plowing, without subsequent tillage, is the first step in the effective control of weeds in corn. The adequate use of **starter fertilizers** is the second step.

Phosphorus stimulates growth . . .

The roots of young corn plants develop slowly. In this respect corn is no different from most young plants. Phosphorus is held firmly by soil particles. Because it does not move to the roots in the soil water as do certain soluble nutrients, young plants are likely to starve during the first few weeks. This is true even in soil which is fairly well supplied with available phosphorus. It is especially the case when soils are cold because then the roots grow slowly. Most farmers have noticed the dark blue color of the leaves on young corn plants, a sure sign of phosphorus starvation.

Starter fertilizers, high in phosphorus, greatly stimulate the growth of young corn plants. They grow so rapidly as a result of the fertilizer that cultivation may be started much sooner and the plants will compete with the weeds much more effectively. This is especially true if the corn is planted as soon as the land is plowed.

Weed seeds, especially grasses, germinate slowly. Who has not seeded a lawn and watched with impatience for the **slow** appearance of the tiny plants? The fertilizer cannot help the weeds and grasses until after they start to grow.

Grows faster than weeds . . .

Corn seeds germinate quickly. The plants usually emerge in less than a week. The fertilizer goes right to work. In one experiment on the Michigan State College farm, Hillsdale sandy loam soil, fertilized plants were 14 inches tall when those unfertilized were but 6 inches. By weight, the relative difference was even greater. Quick shading of the soil slows up weed growth. Even **quack grass** loses in the race with correctly fertilized corn, planted on relatively loose soil.

How should starter fertilizer be applied? Experiments at Michigan State College show that proper placement is in a band two inches out from the seed and two inches below the seed level. The planters of the near future will be made so that method of placement will be possible.

In the meantime, use the best planters available and a fertilizer high in phosphorus. If more nitrogen and potash are needed, apply them before planting or as a side dressing.

Be sure the planter shoes are not badly worn, and **drive slowly.** The split boot applicator does a better job of placement at three than at five miles an hour.

Armour and Company's 1954 Report to Agriculture

Better plants to process your livestock

The fields, the fences, the barn and other buildings of your farm or ranch may look just about the same today as they did some years ago, but we all know that many changes have taken place. New equipment, new methods, better livestock and better strains of grass and grain have brought about tremendous improvements in your business.

It is the same with Armour and Company. Big improvements have been made in the 34 Armour plants which convert your livestock into fresh meats, cured meats, smoked meats, canned meats, sausage, lard and other important foods. While our plants have not changed much on the outside, a revolution has been going on inside. We, too, are doing almost everything differently—and better—than we used to. There have been many important improvements in packinghouse machinery and methods, and in the ways that we make, package and distribute our products.

Our continuing program for improving our facilities at all plants reached a high point in 1954, with the announcement of a plan for modernizing the Chicago plant at a cost of about $10,000,000.

In Chicago, practically every operation concerning pork and some of our beef operations will be relocated and streamlined to give us a more efficient plant. As an example, our new sausage kitchen alone cost nearly $1,000,000. As additional improvements, we have installed or will install hundreds of new machines and equipment for cutting, curing, handling and packaging meat products. The old four-story smokehouses are to be replaced with modern stainless steel smoking rooms that will turn out even finer Armour Star Hams and Bacon than we have ever produced before.

Refrigeration is a highly important and expensive part of meat packing. Everything must be kept cold, and different temperatures in the various processing steps are necessary for successful results. These temperatures range all the way from 40 degrees *below* zero in blast freezers to an "air-conditioned" 55 degrees *above* zero in some processing rooms. Much is being accomplished at the Chicago plant to improve our refrigeration facilities, including the construction of huge refrigerated loading docks so that all products will be kept at the correct temperature—all the way from the plant to your dealer's store.

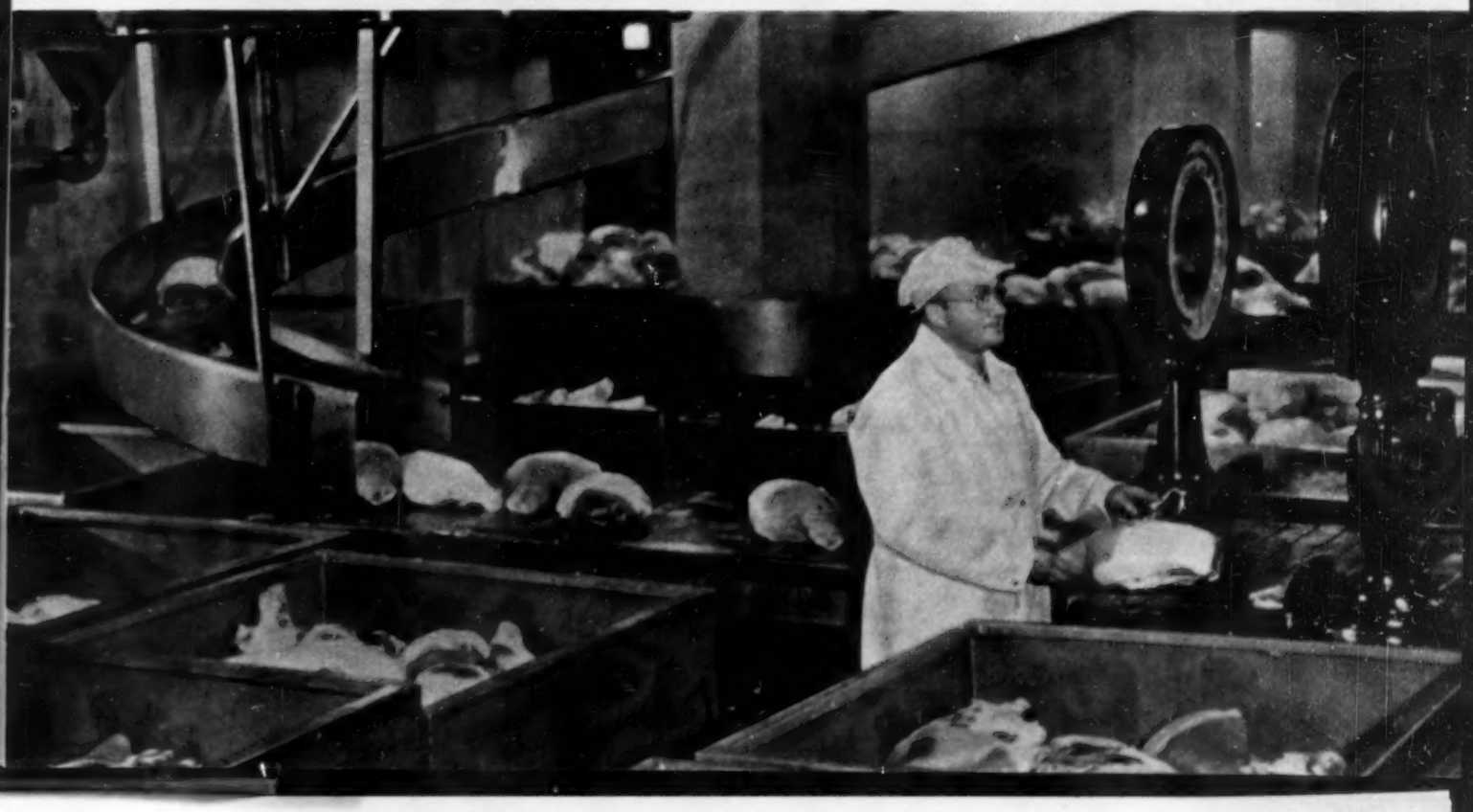
Where meat is handled, the big rooms must be kept scrupulously clean and we are installing acres of new white tile walls and watertight brick floors that can be washed down with steam-hot water.

From the pictures included in this Report to Agriculture you will get an idea of the progress being made. Similar improvements have been made or are planned for Armour establishments in cities near your home.

The Armour improvement program is solid evidence of our faith in the future of the livestock and meat business. We Americans are going to need more food, and the food Americans want most is meat. *You* raise the cattle, hogs and sheep. *We* will see that every single animal is used for the greatest possible good of all.

ARMOUR AND COMPANY

President and Chairman of the Board



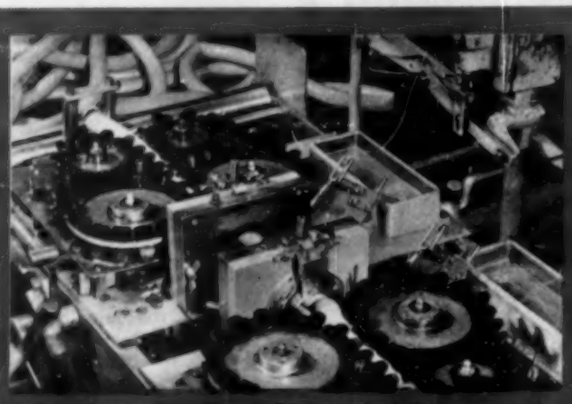
How Armour and Comp
in a better future for Am

As you can see from these picture-stories, 1954 was a busy and progress-filled year at Armour and Company.

While the examples illustrated here show operations only at our Chicago plant, they are typical of the modernization accomplished and projected for the 34 Armour and Company plants throughout the country . . . in which we will invest many millions of dollars.

From meat "on the hoof" to meat ready for the table, we have taken a new approach toward streamlining and improving practically every processing operation in our plants, sparing no effort to make Armour products even finer.

Considerable effort, too, has gone into important improvements in our packaging and distribution facilities. From every point of view, the new Armour and Company modernization program is moving ahead to meet the challenge of the future . . . and to build a *better* future for the livestock producers of our nation.



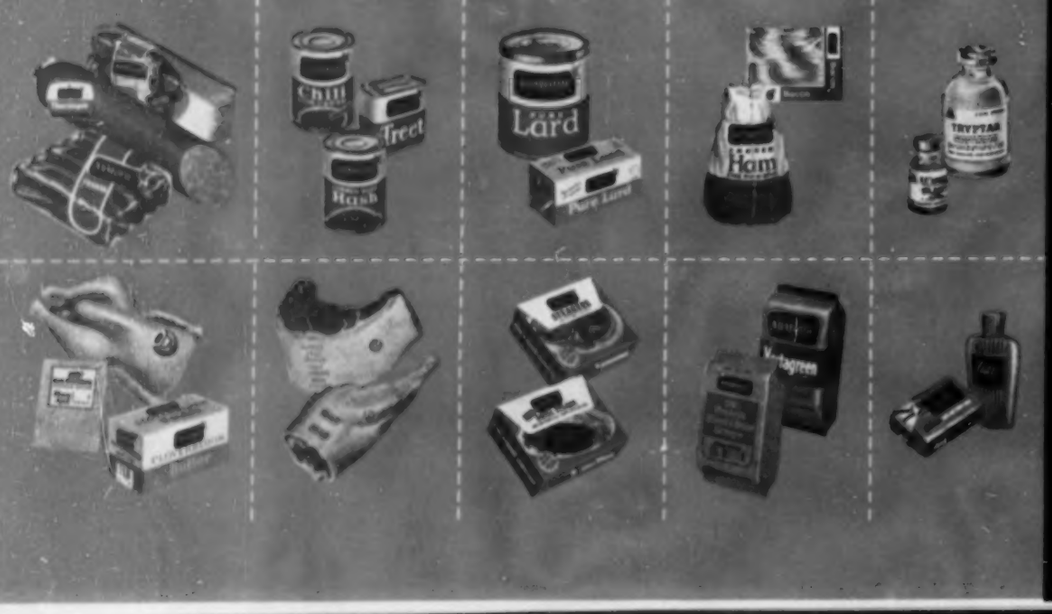
Juicy Armour Star "Franks" in the making! Here an automatic linking machine ties cellulose-enclosed "skinless" frankfurters into uniform lengths before being cooked, chilled, and skinned.

Firing up the Smoke Genera... ture-and-humidity-controlled s... improvement over the old wa... produces better hams and ba...

New Refrigerated Loading Dock at Chicago plant is completely enclosed and can load 8 giant transport trucks simultaneously. Canvas curtains seal in cool air at each doorway, protect meat and other perishable products from refrigerated dock to refrigerated truck.

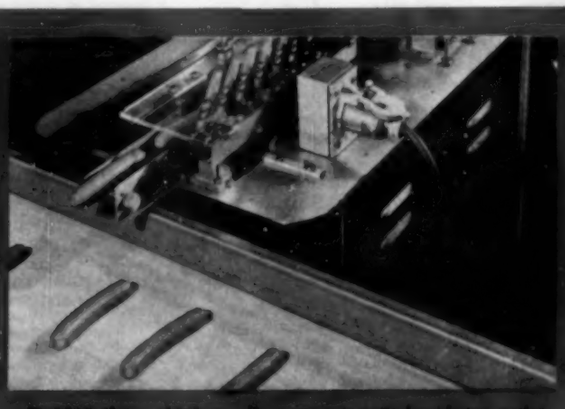
Here a mechanical hoist... lowers them into hopper on... Laborious and costly hand wo...

Famous Armour Products



any is investing millions
erica's livestock producers

...r of a new stainless steel, tempera-
...okehouse. This new method, a vast
...of maintaining a fire at the bottom,
...rt.



Skinning them skinless. Here, an automatic frankfurter peeler removes cellulose casings from sausages. Linked franks with skins are moved through machine that takes off skins, separates franks, drops them on endless belt for packaging.

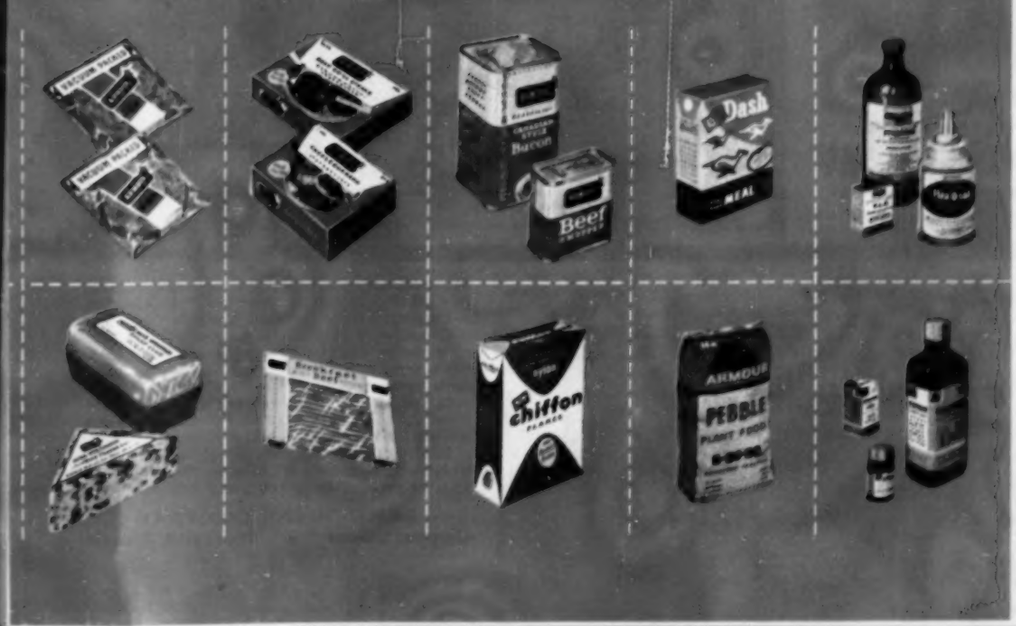
Keep it fresh from the plant to the consumer's house is the idea behind the vacuum packaging of sliced luncheon meats. This modern installation is an important feature of the Chicago plant's new sausage kitchen.

...raises big vat of cured hams and
...eir way to the new smokehouses.
...k is eliminated.

Giant Hammer Mills grind incoming raw materials at new Chicago plant for grinding and mixing livestock and poultry feed supplements. Plant contains more than 1,000,000 cubic feet of space, can process 50 tons of feed supplements per hour.

Full Speed Ahead is the order of the day on the construction of new steel bridge at Building No. 5 of the Chicago plant. When completed, bridge will house an automatic conveyor that will transport chilled hog carcasses to the cutting department.

W ARMOUR PRODUCTS



Better Armour facilities mean better Armour products

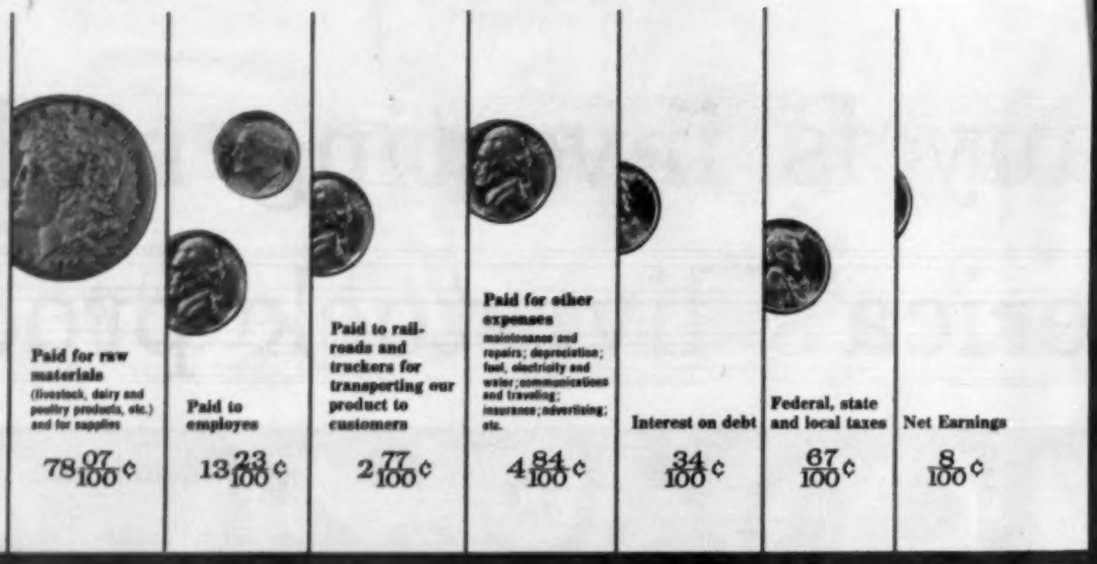
1954 saw the introduction of new and even finer varieties of Armour food products. We introduced Breakfast Beef, several different sausage products and cheese products, corned beef especially packaged for self-service merchandising—and many other Armour Star foods.

You may be sure that our continuing policy of new and finer Armour products for consumers means an ever-expanding demand for your livestock.

How Armour Dollars were spent in 1954

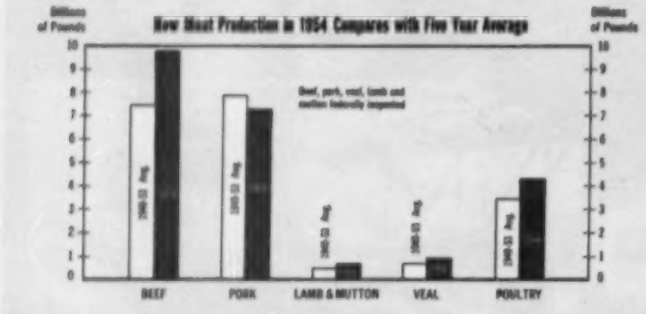
After paying out more than 78% of the $2,056,149,000 of our total income in 1954 for livestock, other raw materials and supplies, we had less than 22% left for all other expenses and profit. Payments to employes took 13%; freight 3%; maintenance, repairs, depreciation, fuel, water, insurance, advertising, etc., nearly 5%, and taxes 2/3 of one per cent. We paid 1/3 of one per cent in interest and had only 8/100 of one per cent for profit.

1954 was a bad year for us financially, but even in our best years, our profits are extremely low in relation to the prices of livestock and meat.


Paid for raw materials
(livestock, dairy and poultry products, etc.) and for supplies
78 07/100¢
Paid to employes
13 23/100¢
Paid to railroads and truckers for transporting our product to customers
2 77/100¢
Paid for other expenses
maintenance and repairs; depreciation; fuel, electricity and water; communications and traveling; insurance; advertising; etc.
4 84/100¢
Interest on debt
34/100¢
Federal, state and local taxes
67/100¢
Net Earnings
8/100¢

1954 Greatest meat-eating year in history

Meat Picture for 1954. Meat in abundance—that's the story for our fiscal year which ended with October, 1954. Total supplies reached an all-time high. Estimated beef production under Federal inspection topped all previous years. Commercial poultry production also set a new record. Veal production was up one-third over the five-year (1949-53) average and lamb and mutton ran 17 percent higher. Only pork lagged behind, being down 9 percent compared with the 1949-53 average, but made partial recovery later in the year. Because of this abundant production, per capita consumption of all meats (excluding poultry) reached a near-record high of almost 156 pounds for the calendar year, 1954, and, with poultry included, topped every other year on record.

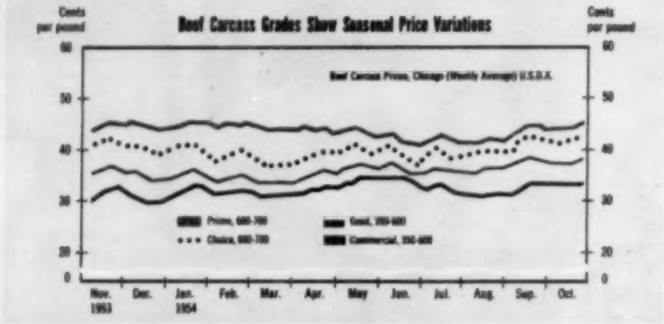


BEEF

The accompanying chart shows the weekly average wholesale prices (Chicago) for steer carcasses by grades. The weekly price differential between Prime and Commercial grades ranged from 6.6 cents per pound for one week in June in contrast to 14.5 cents in December, reflecting seasonal changes in the supply and demand situation.

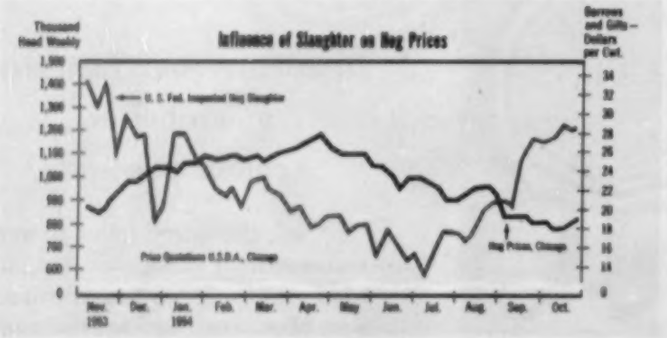
Compared to 1953, prices were more stable, with less fluctuation within any one grade. Price stability, rather than extreme highs or lows, is better for the entire beef industry.

Thanks to vigorous promotion on the part of producer, packer, and retail groups, plus the nation's relative prosperity, consumers eagerly sought our abundant supplies of beef. As in previous years, choice cattle dressing at 500 to 700 pounds were in greatest demand and from all indications, this trend will continue.



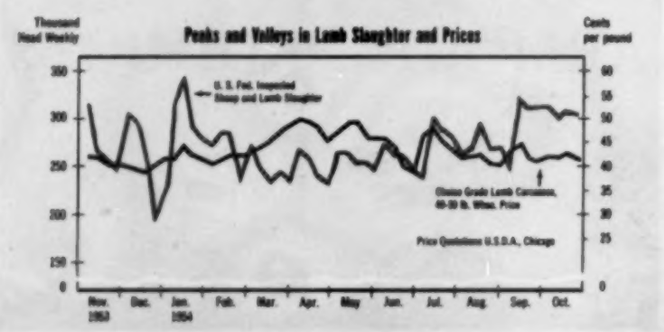
Pork Supply Increases After Light Run

An acute decline in hog marketings characterized the 1954 fiscal year. Market prices reached a peak in April (see chart) but maintained a highly profitable level for producers throughout the year. Prices, plus an abundant corn crop, encouraged producers to expand, leading to more pigs and earlier pigs. Spring farrowings were up 13 percent, compared with 1953, and fall farrowings were approximately 16 percent higher. Producers had 21 percent more of their spring pigs come between December and March, and fall farrowings likewise showed a tendency to advance. Earlier farrowing levels off peaks and valleys of hog production, increases processing efficiency and has a stabilizing effect on live hog prices.



Lamb Slaughter Varies Widely

Violent fluctuations in November-January lamb receipts marked the start of Armour and Company's 1954 fiscal year. Then came a heavier and earlier run of spring lambs, followed by a sharp price break and then a substantial recovery. The need for smoothing the supply peaks and valleys was apparent throughout the year. More orderly marketing enables us to keep lamb in a greater number of retail markets and to hold and increase the number of our customers stocking lamb, thus broadening your market. You can help by adjusting your breeding schedules whenever possible—also by topping out your most forward lambs and keeping in touch with your commission men and marketing associations.



The future looks even better...

More efficient producing methods on the farm pay off in an abundance of meat for America—bigger markets for your product.

Constantly improving processing methods at Armour and Company plants keep pace with your progress on the farm—not only with more and finer varieties of meat products but also in the development of the more than 2,000 different products that Armour makes for the farm, home and industry.

It all adds up to a partnership between the livestock producer and Armour that points to greater prosperity in the years ahead.

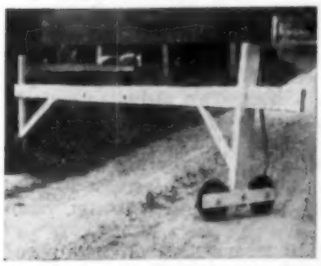
ARMOUR AND COMPANY
General Offices • Chicago 9, Illinois

HANDY HINTS

ANOTHER USE FOR TRACTOR

Harry Geiger, manager of Amana Farms, Amana, Iowa, has come up with an idea that saves considerable time. By mounting a discarded truck tire on the front of the tractor, he can move machinery, push heavy objects, and avoid hooking onto the drawbar for small jobs. Incidentally, the inside of the truck tire also serves as an excellent place to carry a log chain.

GATE ON WHEELS



Walter Meier, Garnavillo, Iowa, has put two wheels from a discarded coaster wagon to good use. Mounting them at the bottom of this temporary gate, he finds it much easier to open and close the gap than formerly.

HOMEMADE POST HOLE DIGGER

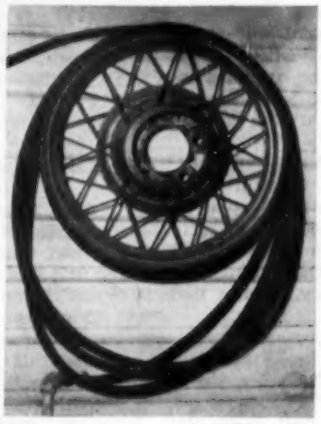
Wilbert Borrenpohl, Washington County, Illinois, made this efficient posthole digger from the parts of an old car, plus aid of his farm welding bench.

The digger is powered by the differential of an old Whippet (any car will do) and frame is from a Model T Ford. Universal joint is mounted about 18 inches from differential housing. The digger auger is standard.

Unit mounts easily on a tractor and is powered from take-off shaft. Borrenpohl said he made the entire assembly in a day and a half. It has ample power and is easily operated.

Illinois. GROVER BRINKMAN.

AUTO WHEEL FOR REEL



An old automobile wheel makes a perfect reel for your water hose or for that matter an equally perfect reel for the air hose in your farm shop. Simple, isn't it? This device was rigged up by Robert F. Anderson, Mount Joy, Pennsylvania.

Maryland. G. E. MC VICKAR.

WELDS SAFETY SHIELD TO HINGE

Armin Garver, Mahoning County, Ohio, recognized the need for keeping safety shields on the power-take-offs on his equipment. To make sure that the shields could not be removed and left off, he welded the shields to a hinge.

It is easy to hook on or off to the power-take-off by simply swinging the shield on its hinge. He has no worries that a hired hand may leave it off with disastrous consequences.

Ohio. JOHN KRILL.

Gehl "Chop-All" Harvester with Hay Pick-up attachment. Picks up a 7-foot swath rolled into a windrow. Saves time and labor, saves valuable nutrients.

● One man with a Gehl Chop-All Harvester clears the field in one fast operation. One man quickly unloads the forage into blower. No heavy bales to load and unload . . . no wire or twine to mess with. You can beat the weather since hay is not leached out by rain . . . has much greater feed value than field-cured long hay. The Gehl chops the nutritious leaves and stems together. *Cattle eat it all, gaining 20 to 30% more feed value than by feeding long hay.* Dollar-wise farmers want the Gehl —made by specialists in forage chopping machinery for over 50 years. There's a big difference in Forage Harvesters. See the Gehl!

Now . . . Gehl Offers a Choice of Big Capacity 5 or 6-foot Mower Bar Attachment

GEHL Chop-All T.M. Reg. HARVESTER

4 "Quick-Switch" Attachments: Hay Pick-up, Mower Bar, 1 or 2-Row.

GEHL BROS. MFG. CO.
Dept. MC-523, West Bend, Wis.

I want to join the popular trend toward chopped hay. Show me how the GEHL "Chop-All" with Windrow Pick-up Makes Better Hay. ☐

I want to save money making my own forage wagons and all-purpose Bunk Feeder with Gehl Parts. ☐

Send me your Grassland Farming Books. ☐

Name.....

Address.....

State.....Acres Farmed.....

If Your Dealer Does Not Handle Goods Advertised in Hoard's Dairyman — Ask Him Why!

EMERGENCY ELECTRICITY AT LOW COST!

Belt up your tractor to an
ONAN GENERATOR
for all the power you need!

NO MORE BLACKOUTS! An Onan Tractor-drive Generator supplies regular 115/230-volt A.C. power for lights, heating system, milker, brooder, food freezer, water pump *and all essential equipment* for as long as you need it. FOUR MODELS: 3,000, 4,000, 7,000 and 10,000 watts. Complete with belt pulley, double-throw transfer switch, circuit breaker, plug-in receptacle and voltmeter. Like any other electrical equipment, standby generators must be properly installed. An Onan Tractor-drive Generator includes a manual transfer switch *which automatically assures a safe installation.*

For farms with frequent power failures, Onan builds gasoline-engine-driven electric plants from 400 to 100,000 watts.

WRITE FOR FREE FOLDER

Onan ELECTRIC PLANTS
D. W. ONAN & SONS INC.
2965 University Ave. S. E.
Minneapolis 14, Minnesota

WHY GROW OLD... *before your time?*

INSTALL A FARM ENGINEERED
Badger
Barn Cleaner
AND MAKE LIFE EASIER

THERE'S A BADGER FOR EVERY SIZE BARN!

ORDER NOW FOR SUMMER INSTALLATION
USE OUR BADGER EASY PAYMENT PLAN
Write for complete information on Badger Barn Cleaners, Silo Unloaders and Barn Equipment.

Installation and Service Specialists in All Dairy Sections of U.S.A. and Canada

THIS SIGN ON A FARM TELLS THE INSIDE STORY

BADGER-NORTHLAND INC.
BOX 31, DEPT. H KAUKAUNA, WIS.

EDITORIAL COMMENT

THIS MATTER OF MARGINS

THE pot is beginning to boil on this matter of marketing margins. Truman Graf's article on page 281 explains what has taken place during the past few years. We know to a degree at least why farmers are receiving a smaller portion of the consumer's dollar.

Unreported is the wide range in marketing margins. For example, why should the milk in one major city cost 17 cents per quart to bottle, deliver, and sell when it only costs 10 cents for these services in another city?

We are quick to appreciate that figures can be misleading. They can be selected to prove almost anything. From preliminary evidence we have reviewed, however, there is plenty of room for study and investigation of apparent gross inefficiencies in many markets. On the other hand, it is apparent that there are splendid examples of exceptionally efficient low cost operations.

From the farmers' and consumers' side of the picture, many unfounded statements and charges have been made against the processor and dealer. Sweeping assertions have tarred all processors and dealers with the same brush. This has been unfair.

From the other side of the picture, however, there has been too much of a tendency to adopt an air of injured innocence. Processors and dealers have pointed to their operating statements in defense of their costs and profits. We would point out that the presence of a cost is not a justification of it. Certainly the farmer and the consumer would far prefer to see a low cost dealer harvesting a good healthy profit than a high cost dealer reaping a moderate profit.

It is our hope that future studies will smoke out the inefficient. Only in the light of strong farmer and consumer opinion can pressure be brought to bear to correct the situation. At the same time, we should be prompt to publicize, too, those who are setting the pace for efficiency. Praise here is overdue.

RED CROSS FOR FARMERS, TOO

LAST year 24,500 families, most of them in rural areas of the United States, turned to the American Red Cross for help after 319 disasters — tornadoes, floods, fires, and other catastrophes.

Few farm people know how that machine operates except in the South, where share croppers expect tornado weather every spring, and Red Cross chapters consider their disaster service the main job for their volunteers.

But up North — well, take Gordon Gilbertson, who's been farming a marginal farm near Avoca, Wisconsin for a long time.

Gilbertson got up at 5:30 last April and went down to the kitchen while his wife finished dressing. It was raining — another thunderstorm — that's about all the attention he paid.

Then, so far as Gilbertson was concerned, the whole world exploded; the house jarred off its foundations; the thunder was right in the room with him, and the dawn through the windows shot up into flames.

He dashed to the door, twisted the knob. He couldn't budge it. His wife joined him, her face bleeding from cuts from broken window glass, and now, when they tried the door, it opened easily.

Outside the pair took a quick glance around them — house crushed by a toppled tree, blown over by the wind, and blown completely off its foundation. The concrete milk house moved three inches off its base; barn wrecked —and, as they later discovered, one of the nine cows crushed in its stanchion while her calf was pinned down beside her, unhurt.

Gilbertson raced next door to ask his neighbors to get the volunteer fire brigade from Avoca, then hurried back. By the time the fire department arrived there half an hour later, the rain had drenched the fire, and Gilbertson and his friends and neighbors totaled up the score.

A freak tornado had hopped and bounced over Iowa County north of Highland twisting and tearing at barns, chimneys, power lines in one locality, then skipped two or three miles to dig into a ravine, then split in two, carrying destruction along both paths.

When the damage had been completely assessed, most farmers found they could handle their own repairs with insurance and extra labor. Gilbertson was uninsured — his marginal returns had made insurance premiums an "unnecessary" luxury.

Several organizations took up collections—they totaled about $300 — and 63 of his neighbors pitched in to help him get his sheds in operating order. But it was too much for the Iowa Red Cross chapter. Gilbertson's wrecked home became a project of the National Red Cross.

With neighbors willing to help rebuild the Gilbertson home at a minimum labor fee; with Gilbertson doing much of the work except that which required experts; while the Iowa Red Cross shopped around for materials at sound prices, the cost of replacing the home was whittled down to $2,300 — mostly for materials.

The Gilbertsons have moved into their new home.

Here are facts to remember about the Red Cross in disaster:

Help for the stricken comes from neighbors — members of the nearest one of the 3,730 Red Cross chapters which cover every county in the United States.

If more than five families are involved, the disaster becomes the responsibility of the Red Cross, with the National Red Cross assisting local chapters with funds or technical experts or both.

Red Cross is not an insurance agency — it fills NEEDS. It does not replace LOSSES.

Since it is a private, voluntary organization of people helping people, it spends funds carefully so that those funds may stretch far —and asks each family helped to contribute all the self-help possible.

It never asks, "Do you deserve help?" It asks only, "Do you need help?"

Last: Red Cross is not a charity — the fellow being helped by Red Cross volunteers today may be the Red Cross volunteer helping YOU tomorrow.

—Ethel Parker

MAKING SENSE OF CENTS AND PER CENT

WHEN we are told we can increase milk consumption 7 per cent by reducing the price of milk 4 cents a quart, it sounds like an attractive proposition. Such a statement was made recently by Secretary of Agriculture Benson. To quote him:

"The price of milk in Memphis was reduced nearly 4 cents a quart over a period of five-months' time.

"Milk consumption increased 7 per cent."

A little figuring will indicate clearly that the advantage is not always ours when the price of a quart of milk is reduced. Here is what happened, according to the Secretary.

Let us start in October of 1950 and assume, for example, that we sold 100 quarts of milk at 19.7 cents.

19.7 cents × 100 quarts = $19.70.

By September of 1952, price had increased to 23.7 cents per quart but sales had dropped 15 per cent. Here, then, is the picture.

23.7 cents × 85 quarts = $20.14.

At this point, price fell "nearly" 4 cents a quart and milk consumption increased 7 per cent. The result:

19.7 cents × 91 quarts = $17.93.

Putting it another way. By reducing retail price 17 per cent, Memphis secured a 7 per cent increase in sales. This places an entirely different emphasis on the effect of price on demand. It gives us what is known as a demand-price ratio of .41. Stating it another way, to secure a 10 per cent increase in sales requires a 24 per cent decrease in retail price.

If we were to assume that processing and distribution costs are one-half of retail costs, the remainder going to the farmer, it would also mean roughly that a 10 per cent increase in sales would require a 48 per cent decrease in the farm price of milk.

Let us hasten to point out, however, that the advantages gained in Memphis apparently came largely from marketing economies and vigorous sales promotion. This, therefore, is not a condemnation of the Memphis action. On the surface, at least, it indicates that Memphis is to be commended.

The point we wish to emphasize is that disregarding changes in processing, marketing, and sales promotion, the simple lowering of the price of milk to the consumer has a very drastic effect on the farm price of milk.

In our January 10 issue, we used the example of a demand-price ratio of .5 and stated that a 10 per cent increase in sales would require a 40 per cent drop in the price to the farmer. Were it not for marketing changes and sales promotion in the Memphis market, the Secretary's figures indicate that the drop in price to the farmer would be even greater.

In 1902, W. D. Hoard said:

One of the most convincing proofs of intelligence in a dairyman is the way he takes to provide himself with the means of information. That shows at once if he is a student of his business. The man of intelligence understands the value of sound knowledge and provides himself with it. The ignorant despise knowledge and are punished with "poor luck."

Questions from Our Readers

Keep ponds from leaking

I have built three ponds for irrigation, one is two acres, one is one acre and one is three-quarters of an acre.

The three-quarter-acre pond holds water very well but the other two do not. They must leak through the bottom as there are no leaks in the dams. The floors of the two ponds are made up of sandy soil with about 10 per cent clay. Do you know of some method whereby I can waterproof the bottoms of the ponds? What materials could I use that would not be too costly?

Do you think a coat of hot asphalt, such as is used to cover roads, will do?

New York B. M. B.

It is not unusual to find a new pond that will leak for awhile until the soil particles can run together to form a compact mass. However, after the first year, if it continues to leak, it is very possible that the pond may be built over a gravel bed or the soil is definitely not suitable for holding water.

From your letter, I gathered that the latter case is the one which is causing trouble in your pond. The Soil Conservation Service made some laboratory tests and found that ordinary salt may be satisfactory in preventing seepage in farm ponds built on certain silt loam soils such as Araby and Hagerstown that are found in parts of central Pennsylvania.

I think possibly our best suggestion would be for you to write to the Department of Agricultural Engineering at Cornell University for their recommendations for sealing ponds in your area. However, if you wish to try the salt method, the Soil Conservation Service recommends the following procedure:

1. Scarify area to be treated to a depth of 12 inches.
2. Uniformly apply one pound salt per square foot of area.
3. Mix soil with plow disc, rotary tiller, or other equipment.
4. Thoroughly roll and pack soil with a sheeps-foot roller, adding water if needed to obtain maximum compaction.

Another material which we have used quite successfully in Pennsylvania and which has been used in other states, is a commercial clay-like material known as Bentonite. This material costs about 5 to 6 cents a pound and is applied in the same manner as the salt; being worked into the ground about four or five inches instead of twelve inches.

After this treatment is completed and the pond is re-filled with water, this material forms a mucky, jelly-like substance which prevents further leaking of the water out through the bottom.

If this material is used, follow manufacturer's directions carefully.

— N. Henry Wooding, Jr.
Pennsylvania State University

Was there any profit?

In a recent issue we noticed you made quite a fuss about a New York Holstein that produced more than 35,000 pounds of milk in 365 days on 2x. You are no different than the breed publications in promoting these forced records. How does it happen we never see what it costs to make these records? Would it embarrass the owner to have his feed costs published? Just how much profit did this "champion" make?

Iowa. E. M.

With the thought that this might be a typical reaction by our readers, we obtained the feed cost figures from Mr. Archie Meek, New York dairyman, who owns the champion milk and fat producer, Hamaret Queen Prospector, that was publicized in our January 10, 1955 issue. From the figures he quoted, you can see that the cow paid for her board, and then some. Incidentally, a recent Midwest survey shows that the average cow earns just $33 a year above feed cost for her owner.

"Queen" was fed as follows:

Grain, 10,000 pounds	$350
Beet Pulp, 1,400 pounds	40
Hay, 10,000 pounds	108
Silage, 2,500 pounds	10
Pasture, 5 months	20
	$528
Value of milk	$1,528
Profit above cost	$1,000

A feeding ratio of 1 pound of grain to 3.55 pounds of milk was used.

ED . . . and EMMA

"Now if you'll just look at the chart!"

". . . Readin' glasses — that's all he needs!"

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ARMOUR FERTILIZER WORKS

MORE FARMERS USE ARMOUR'S

Your share of the consumer's dollar?

(Continued from page 281)

The simple fact is that marketing margins move pretty much independently of farm values of dairy products. During the Korean war, when the farm value of milk was rising, marketing margins lagged behind. Now, with milk prices to farmers down, margins are again behaving independently of the farmer's price.

Why margins vary . . .

A rise of 18 per cent in dealers' gross margins on regular milk was reported between 1950 and 1953 in a study summarized in the February 1954, "Marketing and Transportation Situation." But dealers' operating costs increased at about the same rate during the period, the study showed.

Wages increased 24 per cent, prices of machinery 13 per cent, and prices of fuel, power, etc., 6 per cent, for an average increase of 16 to 20 per cent.

In the same way, butter margins increased 14 per cent during this three year period, but butter manufacturing costs rose 16 to 20 per cent.

Gross margins on American cheese rose 23 per cent, but cheese manufacturing costs rose 18 to 20 per cent.

Evaporated milk gross margins increased 21 per cent and manufacturing costs 20 per cent.

On the whole, marketing margins and marketing costs for dairy products increased in about the same proportion between 1950 and 1953.

How profits changed . . .

Changes in profits for dairy processors since 1951 were reported in a recent United States Senate study. Ten firms from five different states were surveyed. Seven of the ten firms increased their margins and three decreased margins.

Six of these seven firms with increased margins also showed increased profits ranging from 3.66 cents to 12.64 cents per dollar of sales, or a simple average of 7.54 cents. The remaining firm which increased its margins had no increase in profit.

Profit changes to the three firms decreasing their margins could have varied from no drop at all to a simple average decrease of 13.47 cents per dollar of sales, depending on whether the lower margin was because of lower costs or lower profits. The reason for the lower margins to these three plants is not indicated in the Senate report.

The average change in profits to the ten firms as a group could, therefore, range from an increase of 4.52 cents per dollar of sales to a decrease of .87 cents per dollar of sales depending on whether the lower margin in the three firms was because of lower costs or lower profits.

Data from the Senate study would appear to suggest that there is a wide variation among firms as to changes in profits since 1951. Some firms have increased profits considerably while others have apparently experienced even greater decreases. The Senate study, like every other inquiry on the subject, indicates the importance of examining margins closely and hunting for ways to reduce them. But the Senate study figures certainly do not indicate that dealers profits as a whole changed enough between 1951 and the present to account for the average increase which has taken place in marketing margins.

What are marketing costs? . . .

Margins vary from season to season, from product to product, and from market to market. Some examples can give a general picture, however. Here is what was included in the retail sales dollar for a group of northern United States fluid milk and cream distributors from October 1952 through September 1953, as reported in a continuing U.S.D.A. study that is perhaps the most comprehensive yet made on the subject:

These items:	Made up this share of the retail sales dollar:
Cost of goods sold	
Raw milk and cream	48.5¢
Products and ingredients for processing and manufacturing	8.3¢
Expenses	
Labor	20.4¢
Containers	5.0¢
Operating supplies	2.6¢
Repairs, rent & depreciation	4.2¢
Taxes	1.0¢
Insurance	.8¢
Services	1.5¢
Advertising	1.0¢
General	1.1¢
Net margin before income taxes	5.6¢
Total	$1.00

Farm cost of raw milk and cream was about 49 per cent of consumer price. Marketing costs were 38 per cent of the retail price. Labor expenses made up over half of the marketing costs. The average net margin before income taxes for this group of fluid milk and cream distributors came to 5.6 per cent of the net sales price.

Leaving out the cost of the raw milk or cream, here's what made up the marketing margin only for another group of fluid milk and cream distributors in 1952:

For these marketing functions:	The cost per cwt. was	And the percentage of the marketing margin for each:
Processing and manufacturing	$ .83	17.6
Bottle filling and handling	.82	17.4
Delivery and selling	1.87	39.7
Administrative	.56	11.9
Net margin before income taxes	.63	13.4
Total marketing margin	$4.71	100.0

Delivery and selling costs are the largest expense in marketing fluid milk and cream — 40 per cent of the total margin in the study described above.

Perhaps the most complete study of butter and cheese margins was done by the U. S. Department of Agriculture, based on margins for 1939. Margins made up about the same share of retail costs then as they do now and labor costs were clearly the largest expense item—over one-third of marketing margins for butter and almost one-half for cheese. On butter and cheese, profits before income taxes averaged 2.2 and 7.0 per cent of the retail price respectively.

No doubt individual dairies have higher profit margins. But the dairy industry, like other indus-

tries, has marginal or borderline companies who are barely able to continue operations. We are dealing with average profits, and they are relatively small. We can't look for very much reduction in margins by cutting this profit margin across the board. On the average, margins won't be reduced unless costs are reduced which means getting greater marketing efficiency for dairy products.

Let's look at some definite suggestions for more efficient marketing of dairy products:

1. **Cut farm assembly costs** by reducing route duplication between plants and increasing the size of milk-truck loads. Connecticut research shows that hauling costs can be reduced one-third with efficient organization.

2. **Operate plants as nearly as** possible to capacity to get low unit costs. Many of the costs of dairy plant operation are just as high with small as with large volumes of milk handled. If dairy plants were operated without appreciable amounts of excess capacity, and if plant duplication and uneconomical costs would be reduced substantially the saving could benefit farmers and consumers alike. A study in Maine, Vermont, and New Hampshire in the late 1930's placed this savings at $500,000 annually for these states. Milk prices are now about twice as high as they were then. Plant consolidation and elimination of inefficient plants is continually taking place, and this reduces the number of plants operating far below capacity. For instance, between July 1951 and July 1952 dairy plant numbers in Wisconsin dropped over 5 per cent.

3. **Bulk handling of milk** can permit substantial savings in plant operating costs if the plants completely close down their can receiving rooms and concentrate entirely on bulk handling. The best way to make this complete changeover is for plants to help finance equipment so all patrons can go into bulk handling at once.

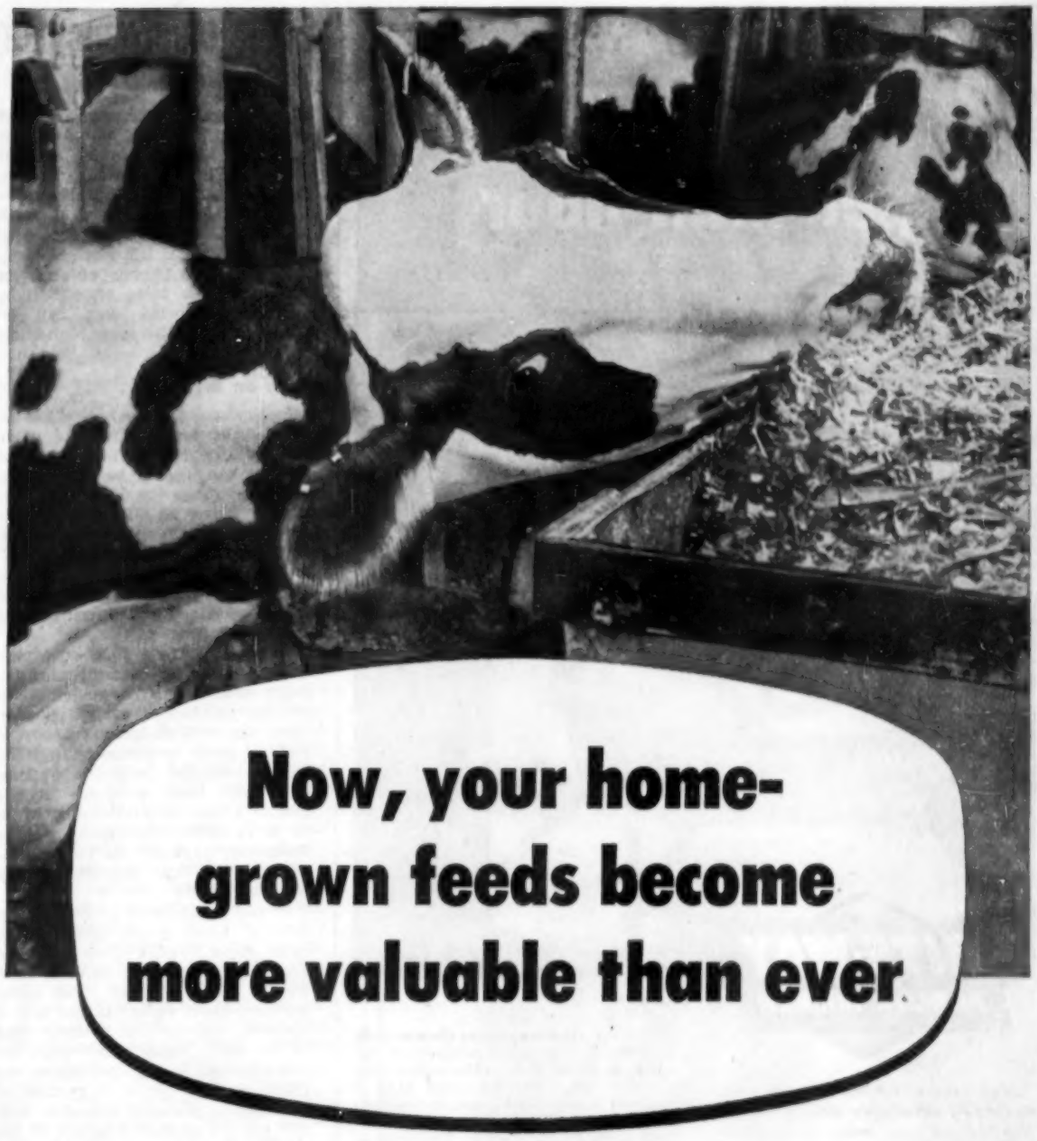
4. **Balance out the work load in the dairy plant.** Unless special efforts are made to plan around it, there will be hours of the day when a heavy work load keeps everyone in the dairy plant very busy, and other hours when the work load is much lighter. Staggered deliveries to the plant and staggered working hours have helped plants save money by spreading the work load.

5. **Use fewer container sizes and handle fewer products in small lots.** Often individual plants are tempted to offer many different products and sizes to attract as many customers as possible. But extra products sold in small quantities result in extra costs and bigger over-all margins.

6. **Use new packaging methods to reach new markets.** Paper packaging of fluid milk has helped expand milk demand, increase distribution areas, and encourage store sales. And paper packaging also makes retail milk prices more uniform, since low production areas now can be serviced by paper packaged milk from low cost areas. But paper packaging has its problems. Unless plants choose between paper and glass, they will find their costs higher than if only one or the other were used.

The small dealer with an output of less than 1,000 quarts a day may find it most profitable to dispose of his glass bottling facilities and accept a paper distributorship from a large dealer.

(Turn to page 315)



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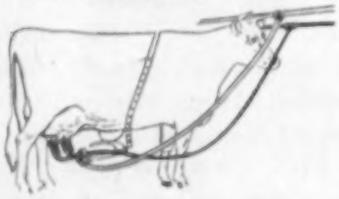

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RITE-WAY DAIRY DIVISION
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Plant emergency crops

(Continued from page 286)

with a grass. Timothy is most often used for this purpose, but you can use rye grass or tall fescue. Where adapted, Korean lespedeza may be a desirable addition to the grass. Seed 4 to 8 pounds an acre of the grass early in the season. If lespedeza is used, seed 10 to 15 pounds of seed an acre. At the same time a light seeding of spring oats can be drilled in to furnish some high-quality early pasture.

Take an inventory . . .

In the case of a complete loss of stand, take an inventory of what you have on hand. That bluegrass pasture can usually be given quite a boost with a top-dressing of nitrogen. Forty to 60 pounds of nitrogen applied in the late winter or as the grass starts to "green up" in the spring may increase by 50 per cent or more the amount of forage produced in the first part of the season.

You may have a field of winter wheat, barley, or oats intended for grain production. These fields will provide excellent early pasture. Sure, you will probably reduce the yield of grain by pasturing, but the benefits derived from the pasture may more than make up for the loss in grain. A top-dressing of 20 to 40 pounds of nitrogen on these fields will increase the forage production and may help to hold up the grain yield.

If you don't have an established field of small grain, plant spring oats early. This crop will be ready to pasture in from 4 to 6 weeks after planting. For early pasture, plant early. If the soil is too wet to prepare a seedbed, mud in the oats rather than wait for more favorable soil conditions. An application of 30 to 40 pounds of nitrogen at planting time will usually pay off in more pasture. If the pasture is not to be used for dairy animals, the addition of 3 pounds of rape will materially lengthen the number of days of pasture. Oats and rape make excellent pasture for swine.

Spring oats pasture eventually plays out and so does bluegrass. So, you will want one or maybe two fields of sudan grass to turn on during the summer. Sudan is in a class by itself as an emergency summer pasture. It will be ready to pasture in from 4 to 6 weeks after planting and will usually furnish good grazing until frost, or until a spring planting of the Haas mixture is ready, or a late August planting of winter rye is ready to pasture. This is especially true if you make an early and a late planting of sudan grass.

For pasture, drill sudan in a seedbed similar to that prepared for wheat. Plant about 20 to 25 pounds of seed an acre. Sudan needs warm soil to germinate, so delay the first planting until late corn-planting time. Treat the seed with a fungicide before planting. An application of nitrogen at planting time may improve the yield on some soils.

Sudan is a sorghum and can cause prussic acid poisoning in livestock. However, this danger can be largely eliminated by:

1. Buying only certified seed or seed that is known to be pure sudan.

2. Letting the sudan reach a height of 18 inches before pasturing.

3. Not pasturing for several days the new growth that appears following a severe drouth.

Plant the Haas mixture . . .

A spring planting of the Haas mixture will furnish late summer and early fall pasture. The Haas mixture is 2 bushels of oats, 2 pounds of sweet clover, 2 pounds of alsike, 2 pounds of red clover, and 2 pounds of timothy. Two pounds of rape may be included, if the mixture is not to be used for dairy pasture. The oats in this mixture should be pastured off or cut for early hay.

Sweet clover can be used for the same purpose. In areas where the sweet clover weevil is troublesome, try one of the non-hardy alfalfa strains. Caution! Non-hardy alfalfa is not winter hardy in the central and northern sections of the country. Do not expect it to survive the winters in these sections.

If you need fall pasture, don't overlook winter rye. It has many qualifications for this job. It is not damaged by Hessian Fly, so it can be planted early. Because it is quite tolerant to cold temperatures, it will provide later fall pasture and earlier spring pasture than the other winter grains. It can be planted in the central corn belt in late August or early September. The normal planting rate is 1½ bushels of seed an acre.

Where adapted, winter barley and winter oats can be used for fall and spring pasture. Winter wheat is excellent pasture, but is not recommended for fall pasture because it is susceptible to Hessian Fly damage. If you wait for the "fly free date" (which corresponds with the optimum planting date for grain production) it can't furnish much fall grazing.

Summer seeded rye grass or rye grass seeded with oats in the spring will normally furnish fall pasture.

Plant cereal grains . . .

Early hay can be made from any of the cereal grains. Oats will produce the more palatable and higher-quality emergency hay. Barley is objectionable because of its beards. Wheat and rye, especially rye, are less palatable than oats. Cut the small grain for hay in the early dough stage.

If you don't need hay until late in the season, use soybeans. Soybeans drilled solid at 90 to 120 pounds an acre will produce an abundance of good-quality emergency hay. You don't need to plant a hay variety. The grain variety best adapted to your locality will produce just as much and as high a quality hay as will a hay variety. For highest quality, cut before the leaves have started to drop and when the beans in the pods are about fully formed.

Sudan grass can be cut for hay. It will produce a large yield of a medium-quality hay. Cut for hay after it has headed out.

Millet will produce a hay crop in about 60 days after planting. However, the quality of millet hay is lower than the other crops normally used for emergency hay production. Plant about 20 to 25 pounds of seed an acre and cut for hay in the early seed stage. **THE END**

POULTRY

by H. H. Alp

"Extras" in the chick feed?

TODAY we hear a lot about new drugs, antibiotics, and so on. How about them? Well, one successful poultryman recently stated the following, and I go along with his conclusions.

"It makes little difference to us as poultrymen whether or not an additive will cause a chicken to grow faster, use less feed, or have more yellow shanks unless as a result we make more money.

"It costs about $10 per thousand broilers to use the 'preventive' level of a coccidiostat in broiler feed from start to finish. In a house where the management is not the best, the preventive level is not always able to prevent. If an outbreak of coccidiosis occurs at 6 weeks the cost of the coccidiostat to bring it under control will vary from $4 per thousand (for a two-day treatment) to $12 per thousand for three two-day treatments.

"In an experiment involving several thousand chickens, our regular commercial feed was compared with the same feed plus anticoccidials (Table I). In spite of the fact that sawdust litter was used and that the humidity was high during the early weeks of the experiment, coccidiosis was not a serious problem even in the control pens.

"In the spring of 1954 we analyzed all of the share flocks settled to determine whether or not it paid to use low level anticoccidials continuously. The results with one of those anticoccidials, sulfaquinoxaline, are set forth in Table II.

"We were amazed to find that contrary to our own recommendations and those of the manufacturer, the total cost per pound of meat was lower; the feed required per pound of meat was lower, and the average weight was higher in those flocks where the low level was used on a part-time basis.

"A careful review of about 70 flocks involved revealed that it was a matter of people rather than treatment, for those that used some sulfaquinoxaline fell in the ranks of those who are always among the most efficient. They were good husbandmen who could see trouble several days before it arrived, head it off, and use the preventive level from there on to prevent a recurrence.

"Here we cannot escape the conclusion that diligent management was worth 1.2 cents per pound of meat. Similar examples can be cited with the other well known anticoccidials.

"Now suppose we live in an area where chronic respiratory disease is a constant threat and we follow the suggestion that we include 100 grams of antibiotic throughout the growing period.

Table I

Treatment	Average weight	Feed efficiency	Total cost/lb.	% Mort. losses	Profit/1000 (25c S.P.)
High N	2.66	2.69	19.98¢	3.46%	$133.82
High N and anticoccidials	2.65	2.62	19.87	2.75	136.06

Table II

Treatment	Average weight	Feed efficiency	Total cost/lb.	% Mort. losses	Age in days
Sulfaquinoxaline— low level	3.31	3.45	25.94¢	10.34	87.4
Some sulfaquinoxaline— low level	3.38	3.20	24.76	7.46	85.0
No sulfaquinoxaline— low level	3.30	3.50	25.99	11.02	87.4

We find that it will cost us $60 for each gram level of antibiotic used per ton of feed for each 1,000 broilers. In several instances our flocks have suffered from chronic respiratory disease, and, although those birds that were fed the high level of antibiotic had better appearance, better rate of growth, and better feed conversion, they failed to pay the bill for the antibiotic.

"On the contrary we have a number of field cases where the level of management was so low that the antibiotic was paid for several times over. However, there was a considerable net loss on the flock.

"Specific chemical treatments for poultry diseases have undoubtedly saved the industry millions of dollars, but it is a serious mistake to use these materials as a substitute for good management. They should be used as they were originally intended as specific treatment for specific infections."

These comments are taken from an address by Dr. J. C. Hammond before the Poultry Conference of the American Farm Bureau Federation, December 13, 1954.

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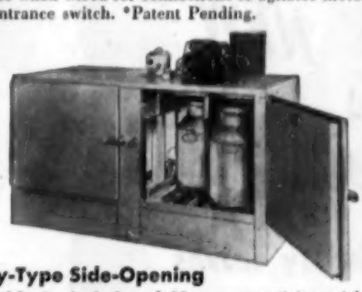

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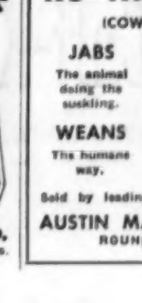

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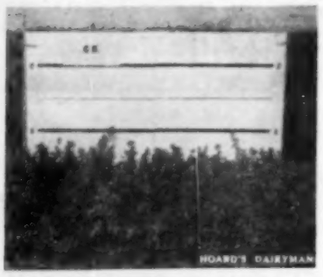
FERTILIZED ALFALFA. Before seeding, 1,000 pounds of 0-20-20 were applied, and 200 pounds of 5-20-20 applied as a top-dressing.



NO FERTILIZER on this field resulted in spindly alfalfa plants. Top yields require a fairly large amount of phosphorus, potassium.

Increase yields and feed value of alfalfa

Top-dress your alfalfa each year with 5-20-20. The phosphorus helps increase the protein content and potassium helps prevent winterkilling.

by W. W. Nelson

PROPER fertilization will increase your alfalfa yield per acre, its percentage of protein, the phosphorus content, and in many cases the winter hardiness. These are all important for the alfalfa grower and it doesn't make any difference if you apply the fertilizer in the fall or spring. These are some of the results of the first three years of an intensive study of the effect of time, rate, and ratio of fertilizer applications on Ranger alfalfa in Minnesota.

The yield of alfalfa on the untreated or check areas was 9.69 tons over the 3 year period or 3.23 tons per year, which is almost a ton above the 2.4 tons estimated average for Minnesota and Wisconsin. Thus we started out with a fairly good soil for alfalfa.

The highest yields obtained were 13.52 tons (4.51 tons per year) where it had been fertilized with 1,000 pounds of 0-20-20 the spring before seeding plus 200 pounds of 5-20-20 for the second and third crop year. When 0-20-20 was substituted for 5-20-20 in the top dressing, the yield was 13.44 tons (3.48 tons per year) giving very little increase for the nitrogen applied.

The time to apply fertilizer appears to be when it is the most economical and convenient. No differences in yields were found when the spring application of fertilizers was compared with fall application over the three year period. In one year, fall would be a little ahead and the next year the spring application would be ahead.

Applying potash along with a phosphate fertilizer became increasingly important with each additional year of hay production. Alfalfa, with potash, is something like the boy who spends his week's allowance the first day he gets it. It will take up potash in large amounts as long as it's available and then will suffer because of potash deficiency.

This is brought out by the fact that during the first year of hay production there was no difference in yield between phosphate alone or phosphate-potash fertilization. However, by the third year only phosphate-potash fertilization with some top-dressing was giving good increases. Heavy applications of phosphate alone were yielding only slightly more than the unfertilized alfalfa. In other words, the potash content of the soil was high enough to take care of the needs of the alfalfa the first year, but not high enough to carry on the next two years.

The highest alfalfa yields were obtained when the alfalfa was fertilized before seeding with enough fertilizer to give it a good start. This will depend on the fertility level of the field. It must be followed by annual top-dressings of about 200 pounds 0-20-20. Higher biennial treatments may do the job just as well and also save the extra time required for application. It should be remembered, however, that alfalfa will use up its supply of potash very rapidly.

The fertilization of alfalfa increases the protein and phosphorus content of the alfalfa. These are two very important constitu-

The author is a member of the agronomy department University of Minnesota. Northeast Experiment Station at Duluth.

"I passed the old farm today. The people that bought it certainly have made a mess of it by cluttering up the place with several oil derricks!"

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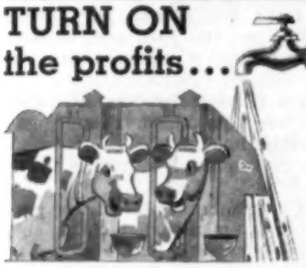

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YOU GET MORE WITH GOULDS

ents of good hay for our dairy cattle and they go hand in hand in alfalfa. Fertilizing alfalfa with phosphorus increases the phosphorus content of the hay and to a certain point at least, the heavier the phosphate fertilization the higher the protein content of the hay.

When potash is applied along with phosphate our protein content is slightly lower than for phosphate alone, but our yields are higher, so that more pounds of protein are produced per acre. Even though our protein content is lower when we apply potash along with phosphate, it is still higher than the unfertilized alfalfa, as indicated in the table.

Effect of fertilization on % protein content of Ranger Alfalfa

Cutting	Treatment, lbs./Acre		
	Unfertilized	40-280# P_2O_5 0# K_2O	40-280# P_2O_5 40-280# K_2O
	% Protein	% Protein	% Protein
1st	19.4	20.5	20.0
2nd	22.6	23.4	22.6
3rd	21.5	22.4	21.8

It has been found that yields were highest when the phosphorus and potassium content of the alfalfa is high. The highest protein content is found at a medium potassium and a high phosphorus content.

When the different cuttings within a season are compared, the second cutting is highest in per cent crude protein, phosphorus and potassium, followed by the third cutting. The first cutting is the lowest in food value. This is possibly due to the steminess or coarseness of the first cutting as the leaves are points of concentration for these nutrients.

The need for a medium potassium content, above 1.3 per cent, is not so much for its feed value as for its value to the plant. Potassium has a function in winter hardiness and a certain concentration must be present to enable the plant to survive the winter. In the first three years only slight winterkilling has taken place, but in these instances the greatest amount has been where phosphate was applied alone without potash.

Band seeding

Band seeding of alfalfa and birdsfoot trefoil gave 21 per cent more seedlings than broadcasting in nine field tests conducted by the Michigan Agricultural Experiment Station over a three-year period.

Benefits of band seeding were also seen in greenhouse tests with radioactive phosphorus. The first month, alfalfa seedlings located 0, 1, 2, 3, and 4 inches laterally from fertilizer (1½ inches deep) received 98, 66, 15, 3, and 0 per cent of their phosphorus from fertilizer. Percentages in two months were 77, 62, 50, 24, and 7.

Many seeds falling between fertilizer rows 7 inches apart during broadcast seeding apparently germinate, but the seedlings perish before obtaining enough growth stimulation from phosphorus in fertilizer up to 3½ inches away.

Greenhouse tests showed that alfalfa seedlings 1 to 2 inches away, laterally, from fertilizer produced only 60 to 80 per cent as much top growth as those seeded directly over fertilizer. Phosphorus was 80 per cent higher in top growth of seedlings directly over fertilizer than in those 4 inches away.

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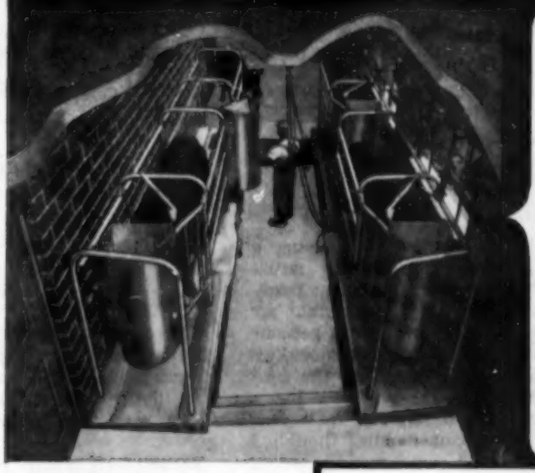

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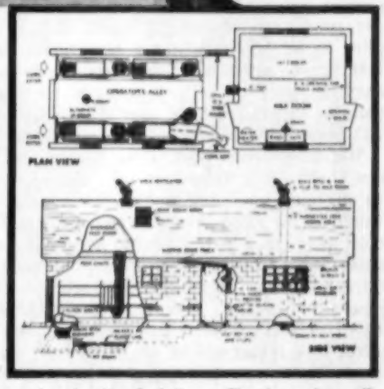

In the plan at right Clay architects and engineers give you lowest cost building service with approved plans tailored to your needs . . . including estimated costs of equipment and material. Ask for FREE ESTIMATE SHEET that lets you personally see how your dairy can be planned at a cost that will save you hundreds of dollars. Clay supplies all items shown in heavy black.

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DAIRY FARM HOME

What do you plant?

Your potatoes and peas may already be in. What else you plant depends on family likes, garden space, time and help available.

by Marian Pike

THERE are many reasons for having a home garden—economy, better nutrition, a family work project. But many of us garden for the simple reason that we just can't help ourselves; we love to get our hands in the good rich earth and besides, we fall for all those pretty pictures in the seed catalogs in January.

I am an incurable optimist and each year I raise more than I can handle, though I always vow I won't, and sometimes the weeds get pretty thick around here. But I try to plan in advance so that I have good variety. I try to emphasize those foods which are (1) easy to prepare, (2) expensive to buy, (3) usually unavailable in our village store, and (4) especially important for good nutrition.

We love green peas, lima beans, and black eye peas, but they are all time-consuming to prepare so I try not to go overboard on them. I do raise lots of asparagus and broccoli which are expensive to buy but easy to raise and process. Fresh cress, kohlrabi, okra, currants, and gooseberries are practically never available in a market to me, so I raise them myself. Greens like kale, spinach, mustard, and Swiss chard are such very valuable foods that I go heavy on them. Carrots are always available to me at reasonable prices so I don't worry much about canning them or keeping them in a root cellar.

You have to pick and choose what vegetables and fruits are worth it to you, or your husband may find that he has more garden than he can handle with only one wife.

Green vegetables . . .

The Basic 7 Foods urge two or more servings of vegetables daily other than potato. One should be green or yellow; "greens" often.

Kale, mustard, spinach, tampala, Swiss chard, all "boiling greens" are good alone, or mixed in almost any combination. A few young tender leaves of any of them incorporated in a tossed salad adds character.

Plant your kale late, though it can be sown from early spring to three months before the first expected hard frost. A light frost actually improves the flavor, and later plantings seem to have less trouble from bugs.

Kale may be frozen by the orthodox blanching method, or it may be frozen completely cooked, with bacon and onion added for flavor. This latter method doesn't save as many vitamins, but it's easy to cook more kale than you need for a meal and then freeze up what is left over.

If Daddy refrains from making a wry face, you'll be surprised at the way the small fry will gobble up well-cooked and seasoned kale.

Mustard alone is too strong for our family, but we enjoy it mixed in with other greens.

Tampala is one of those new heat resistant types of spinach. We've had very good luck with it.

Don't forget your turnip and beet tops among the greens.

Yellow vegetables . . .

Carrots, sweet potatoes, rutabagas . . . all root vegetables are popular yellow vegetables. Rutabagas are good raw as well as cooked and, like carrots, should be ruthlessly thinned if you want well formed vegetables and quick growth.

Sweet corn can of course be white as well as yellow. We happen to be a yellow corn family and have had excellent results with "Iochief." I don't attempt to grow it in my own garden. The men put it in with machinery in empty feedlots or at the edge of a field that didn't come out even. That means we're likely to have a lot of corn ready at once, but I don't care as I might as well process a lot of it as a small amount. We like frozen corn almost as well as fresh.

Squash can be yellow or green. I seldom plant any summer squash or zuccini. It's just too watery for our taste, so we wait for the fall and winter squash that we prefer. Butternut is our favorite. It can be baked or pared and boiled with equal success. Many people who thought they had an aversion to squash have changed their minds when they have eaten my Butternut squash, peeled, pressured, mashed, and seasoned with plenty of butter, salt, and a little celery salt and a whiff of nutmeg. Topped with a nest of green peas it has eye as well as taste appeal.

Salad vegetables . . .

Lettuce leads the parade of salad vegetables. I plant only head lettuce, thinning it as I can use it to stand about a foot apart. If you live in the northern states you might want to try Cos or Romaine lettuce.

Endive may be interchanged with lettuce. In early stages, it may have a bitter taste, but when the inner leaves blanch it becomes sweet and tender.

Cress or pepper grass is something I've urged you before to try. Not many of us have the running stream or moist soil to grow watercress, but we can try the fine curled cress. It grows quickly and has a pungent flavor which is delicious in salads.

Parsley is so pretty I even use it as an edging for flower beds. It is really rich in vitamins and, if handled right, will reseed itself.

Radishes, tomatoes, and **peppers** are almost universally grown by home gardeners. The secret of radishes is to get them in early. The secret of tomatoes is to always have plenty of sun and provide water at crucial times. I really neglect peppers, and yet they bear and bear and bear. I wash and remove seeds from red and green, sweet and hot peppers alike, sack them in cellophane bags and put them in the freezer. They are available all year round for casseroles and salads.

Cucumbers are limited only by your space. For salads, you may prefer the long, smooth, dark green hybrids as we do, but you may also want to grow the little pickling types. Some of you may have to ration your vine crops, like squash, cantaloupe, pumpkin, and watermelon because they are space taking.

Cabbage and cousins . . .

Cabbage is easily grown from seed, but unless you are going to make sauerkraut you are likely to find yourself with too many heads bursting at once. I buy plants and stagger the plantings. Don't forget Savoy and Chinese cabbage. They're fun for a change. So is cauliflower.

Kohlrabi is easily grown. We prefer it raw instead of as a relish. Broccoli is so valuable in nutrients and so easily grown and processed that we always include it. Collards, which are also a "boiling green," do well under most conditions. Even Brussels Sprouts are easier to grow than I used to think.

Other vegetables . . .

Your green peas are probably already planted or should be as soon as you can get in the garden. The same goes for potatoes and onions. But wait awhile on those bush, lima, kidney, butter, and edible soy beans. They won't make much growth until the soil is warm and they're likely to get nipped anyway.

Okra is a vegetable I had always thought of as southern, but now I find it can be raised quite far north. It's more than a flavoring for soups and stews. Try slicing it, mixing with flour and salt, and cooking until tender in plenty of bacon grease or butter.

Egg plant is a great satisfaction to raise. Mine never get very big in our climate, but they are so pretty for table decorations, as well as good in casseroles or sauted by themselves.

I usually let my father-in-law raise parsnips. It is such a nuisance not to be able to plow them up in the fall with the rest of the garden. But I am always mighty glad to have Dad appear at my back door with a mess of parsnips in the early spring.

Asparagus entails a waiting period. But it is well worth it, if you can spare space for a bed.

Small fruits . . .

Small fruits work out fine in my program. Rhubarb, which thrives no-matter-what for me, is very welcome pushing out in the spring when you are hungry for fresh things. The new red varieties are not as heavy yielders as the older kinds, but you don't usually need a tremendous amount. I bake it in the oven, with no water, lots of sugar and a little tapioca, for thickening.

Unless we have a very dry year, I give my strawberries a real beating. We disk them heavily and spread them with ground corncobs which have been used as bedding. This acts both as a mulch and as fertilizer. We have a bed that has been going eight years under this treatment. **THE END**

From Day to Day

by Lois J. Hurley

THE cards our children carry home from school have been the target of both parents and educators in the past few years. In some places changes have been made.

In our school system, radically new cards were introduced last fall. In the first place, the child only brings them home twice a year; the other two quarters are personal conference checkings. In the early fall, the teacher visits the pupil's home; in the third quarter, parents (usually mother) visits the child's teacher for a half-hour talk about the child's progress and problems.

Otherwise, the card scores the child three ways: His social developments, his academic standing according to his own capacities, and his standing in relationship to recognized standards of progress according to his class level and classmates.

This is a very fair way to mark a child, I think, especially scoring him according to how well he lives up to what he is capable of doing. Not all children have the same capabilities for keeping up with established levels, at the same rate of speed, yet they are not necessarily "dumb" children. Putting a slow child against a fast one may make him lose heart in his own abilities. Putting him up against himself is different.

A debt we owe . . .

Most of us who have borne children did so without ever hearing of a Hungarian doctor named Semmelweis, who in a Vienna charity hospital, back in the mid-1800's made a discovery that has saved the lives of many millions of mothers and newborn babies.

At the time Dr. Semmelweis entered the Vienna hospital as a medical student, as many as 36 per cent of the women delivered in the wards died, along with their babies. They were taken immediately to the autopsy room, where students used the dead bodies of mother and child to practice the mechanics of delivery. From the autopsy rooms, the doctors went to the beds of the lying-in mothers, did examinations, then back to the dead, then on to the living, a never-ending vicious circle.

To clean their hands, they merely wiped them on their coat lapels. In fact, it was a badge of honor for a "sir doctor", as they were called in that day, to wear a coat foul with swipings from dissections and deliveries and exudations of noisome nature. Through a heart-breaking period of trial and error, Dr. Semmelweis arrived at the notion that if doctors would **wash their hands** after handling the dead, before handling the living, they would not spread the cadaveric germs that mean almost certain death.

At great insistence, basins of soap and water were placed in the wards. The doctors resisted the practice, but reluctantly agreed. It helped some, but not enough. Dr. Semmelweis figured that more thorough disinfection must take place, so he added basins of chloride of lime water alongside the basins of water. He **forced** their use. The percentage of child-bed deaths dropped gradually, gradually, until finally there were none. Then, political maneuvers forced him out of the hospital. His methods were abolished and 11 out of 16 women died the first week. All his work undone!

However, he continued experiments and expostulations over discouraging years and the world of today benefits from his efforts. Child-bed fever is extremely rare and women anticipating the birth of a child never give it a thought.

Farm and Home Week echoes . . .

"The farm house is years behind in convenience, comfort, and practicability," said Dr. T. J. Brevik, of Michigan State College. "Out of 900 farm families interviewed, 85 per cent want a basement; 90 per cent want central heating, porches, and a spare bedroom; 75 per cent want a separate dining room and 60 per cent a first-floor workroom and a driveway laid out so callers would come to the front door.

"As a result of these wants, the 'tri-level' house was planned. On the lower level (basement) the heating plant, work room, storage area, washroom, recreation space, and wash-up area would be located. One-half flight of stairs would lead to ground level which would contain kitchen, dining room, living room, and outside entrances. Another half-flight up from ground level would be the bedrooms and bath."

"Start with the kitchen and workroom in any plan to remodel or build," advised Margaret McCordic, University of Wisconsin. "Center kitchen activities around refrigerator, range, and sink. Allow three to five feet for preparation and mixing area near the refrigerator. Two or three feet of counter on each side of the sink should be allowed; right for stacking the dishes; left for draining them. Cooking and service space calls for two feet on the right of stove and one and one-half feet on the left for serving."

"Neuro - muscular hypertension (tension to you) is a problem of modern day life and we must learn how to control it if we are to live happily and productively," advised Miss Maja Schade, University of Wisconsin.

"Relaxation is the answer and this word means different things to different people. Rest or reduced activity relaxes some people. Others relax by doing something different from daily routine; sometimes something quite physically strenuous.

"By whatever means you are able to relax, do it for clearer thinking through of your problems and better ability to solve them, if they are solvable. If not, learn to live with them."

WORTH REMEMBERING:
"Worry never robs tomorrow of its sorrow. It only saps today of its strength."

No. 2245. Suitable for all ages and sizes is this cap-sleeved, gently flared dress and short-sleeved bolero, with interesting necklines. Sizes 12 to 46. Size 18: Dress and bolero, 5⅛ yds. 35-in.

No. 2288. Pretty, scoop-necked little girl's play-suit has matching, cap-sleeved, button-front dress with contrasting Peter Pan collar. Sizes 4 to 10. Size 8: Dress, 2½ yds. 35-in. Playsuit, 1½ yds. 35-in.

No. 2037. Charming, scoop-necked, button-front style has soft unpressed pleats in skirt; can be made with cap sleeves or sleeveless. Sizes 10 to 40. Size 16: Cap-sleeved style, 4⅛ yds. 35-in.

No. 2657. Attractive, easy-to-sew design has shirred neckline, gently flared skirt, pretty pouch pockets. Sizes 12 to 42. Size 18: 3⅞ yds. 35-in.

No. 2832. Feminine, flattering flare-skirted style, with soft, narrow-yoked neckline, its own pretty, short-sleeved collared bolero. Sizes 12 to 40. Size 16: 5⅛ yds. 35-in.

No. 2888. Delightfully young scoop - necked sleeveless design with Empire waistline, shirred bodice, gathered skirt. Sizes 10 to 40. Size 16: 3¾ yds. 35-in.

No. 2265. Smart, simple style is attractive for all ages and sizes, has narrow yoked neckline, cap sleeves, flared skirt. It's so figure-enhancing, you'll love it. Sizes 14 to 48. Size 18: 3½ yds. 39-in.

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A pan of treats

. . . . will be enjoyed by the entire family, particularly by those hungry youngsters coming home from school.

by Helena Davidson

STICKY BUNS are just one of the many delicious variations of the basic roll dough.

REMEMBER coming home from school, cold and half-starved, to the delightful aroma of Mom's kitchen on baking day? There were fragrant sugar buns lifted from the pan onto a white dish towel, and a heaping plate of cinnamon rolls, spicy and warm, to eat with a glass of milk.

Here is a collection of treats you can make with roll dough. On baking day, a third of the dough is set aside, and when the pans of dinner rolls are set to rise, it is used to make something special. The eggs and sugar blended with extra shortening make the rolls sweet and light, and the milk in the recipe insures an evenly browned, wonderful tasting product.

Heat the rolls in the oven the second day, and make crisp, sweet-tasting toast of the left-over cinnamon bread. But then, you need not worry about that. There never are any left-overs.

Sticky Buns

3 tablespoons melted butter
1 tablespoon cinnamon
½ cup raisins

Roll dough to ¼-inch thickness. Spread with melted butter; sprinkle with cinnamon and add raisins. Roll as for jelly roll. Cut in 1½-inch slices. Place in greased tin and let rise until double. Just before baking, pour over the sticky bun sirup. Bake at 350 degrees for 30 minutes. Invert pan immediately to allow buns to absorb any sirup remaining in pan.

Sirup

½ cup brown sugar
1 tablespoon butter
¼ cup water

Mix ingredients in saucepan. Bring to boiling point and pour over raised buns.

Cheese Rolls

1 cup grated sharp cheese
1 tablespoon paprika
Melted butter

Roll dough ⅛-inch thick on floured board. Brush with melted butter. Sprinkle on the paprika and grated cheese. Roll as for cinnamon rolls. Cut in 1-inch slices. Place on greased tin, and sprinkle lightly with paprika. Let rise until double. Bake at 400 degrees for 12 to 15 minutes. Serve warm.

Sour Cream Coffee Cake

½ cup thick sour cream
2 teaspoons cinnamon
½ cup brown sugar
½ cup nutmeats

Pat the dough flat and fit into a greased round tin. Make deep indentations in the surface with the back of a spoon, and spread sour cream over the surface, allowing the cream to fill the holes. Spread brown sugar over the top. Sprinkle with cinnamon and add the nutmeats. Let rise for 30 minutes and bake at 375 degrees for about 20 minutes, until the surface is bubbly and brown.

Clothespin Rolls

Roll dough ¼-inch thick. Cut into narrow strips, about ½-inch by 9, and moisten each end. Wrap aluminum foil around a dozen clean clothespins. Wrap dough strips around pins, but do not overlap except to fasten at the ends. Let rise almost double. Brush with milk or melted butter. Bake 15 to 20 minutes in 375-degree oven.

While warm, pull out pins. Fill with almond paste, your favorite jam, marmalade, or mincemeat.

Pineapple Filling

½ cup sugar
2 tablespoons cornstarch
⅔ cup pineapple juice
1 tablespoon lemon juice
½ cup drained, crushed pineapple

Cook sugar, cornstarch, and juice until clear, stirring constantly. Remove from heat. Add lemon juice and pineapple. Cool.

Almond Paste Filling

½ cup almond paste
2 eggs
¼ cup sugar
½ cup butter

Cream butter; add sugar gradually and cream until fluffy. Add unbeaten eggs and almond paste. Blend thoroughly.

Fruit Filling

Combine the following ingredients in a saucepan:

¾ cup cooked, chopped prunes
½ cup raisins
½ cup cooked, chopped dried apricots
¼ teaspoon salt
½ cup water
½ cup sugar
½ teaspoon cinnamon

Cook until thick, stirring constantly to prevent scorching. Cool.

Apple Cake

4 apples, pared and sliced
3 tablespoons butter
⅔ cup sugar
1 tablespoon flour
1 teaspoon cinnamon
1½ tablespoons lemon juice

Pat dough flat and fit into a greased pan. Press apple slices firmly into dough. Cream butter; add sugar, flour, lemon juice, and cinnamon and cream together. Spread over top of apples. Let rise until loaf is nearly doubled. Bake in hot oven for about 30 minutes.

Cinnamon Loaf

1 tablespoon cinnamon
½ cup sugar
Additional cinnamon for topping

Roll dough ⅛-inch thick. Sprinkle with cinnamon and sugar, reserving 1 tablespoon of sugar for topping. Fold dough in half; seal edges; then shape into a loaf. Place in greased loaf tin. Sprinkle top with remaining tablespoon of sugar and additional cinnamon. Let rise double. Bake at 375 degrees for 30 minutes. Cool before slicing.

Almond Butter Rolls

⅓ cup melted butter
¾ cup brown sugar
2 tablespoons flour
2 teaspoons almond extract

Mix all ingredients together. Roll out dough to a 12-by 10-inch rectangle. Spread with the almond-butter filling. Roll as for a jelly roll. Cut in ½-inch slices, and arrange on greased baking sheet. Flatten each roll slightly and decorate with blanched almonds. Let rise until double; brush the tops of rolls lightly with cream and bake at 400 degrees from 12 to 15 minutes.

This is our favorite white roll recipe. It is sufficient for three dozen large dinner rolls, or as we prefer, two pans of rolls and a pan of treats.

White Rolls

2 cakes compressed yeast
⅓ cup sugar
1½ cups scalded milk, cooled to lukewarm
½ cup lukewarm water
1 tablespoon salt
2 eggs
½ cup melted shortening
6½ to 7 cups sifted all purpose flour

In a mixing bowl, place lukewarm water, milk, sugar, and yeast. Stir until the yeast is soft and sugar dissolved. Add 2 cups of the flour and the salt. Beat until ingredients are well mixed.

Add the eggs and cooled shortening. Beat vigorously. Gradually add the remaining flour, using the maximum amount if the dough seems sticky. Turn out on a floured board; cover with a towel and let the dough rest about 20 minutes before shaping. **THE END**

Your share of the consumer's dollar?

(Continued from page 307)

7. **Reduce distribution and selling costs.** These make up 40 per cent of total marketing costs for fluid milk and cream. They can be cut by more efficient use of delivery labor. For this we need to find out exactly how many customers and quarts can be serviced by a delivery route. Then, working with a number of customers per route mile and the average number of packages per customer, we will be able to plan for an efficient number of trucks.

Most drivers are now paid on a commission basis, computed on the sales price of the produce delivered. Under this system a substantial part of the saving from changes in delivery routes or methods which make possible the delivery of more products in the same amount of time would go directly into increased wages without benefiting the consumer in the form of lower prices. Consequently, these pay plans would have to be adjusted so that savings from changes in delivery routes or methods would benefit the consumer in the form of lower prices.

8. **Reduce the consumer's price for quantity delivery.** A 1950–1951 report of the New York State Temporary Commission on Agriculture indicates that the distribution costs to the one-quart home delivery customer often exceeds the distribution cost to the four-quart customer by 10 cents or more per quart. Yet under present retail pricing methods the large volume customer normally gets no encouragement and the small volume buyer pays less than his share.

9. **Reduce prices to wholesale customers as volume delivered increases.** After all, wholesale delivery costs also decrease when the quantity of milk delivered per stop increases. Recent studies in California indicate that if delivery costs are about 5 cents per quart for a 10-quart wholesale buyer, they are about 1.3 cents per quart for a 100-quart delivery and about 0.6 cents a quart for a 1,000-quart delivery. Lack of volume discounts encourages storekeepers to buy from a number of distributors, reducing the volume of sales per distributor at each stop and resulting in high distribution costs.

10. **Cut transportation costs.** One important step would be to establish uniform trucking regulations between states. Also, where standing agreements can be made with dealers in deficit markets, handling charges sometimes can be reduced as much as 25 cents per hundredweight by decreasing labor and facilities for surplus handling. New products also can reduce transportation costs. Wisconsin research in 1954 showed that it costs 5.7 cents to package and ship a quart of concentrated milk 1,200 miles, compared to 9.3 cents for a quart of whole milk.

11. **Give continued attention to our quality problems.** Dairy products move more rapidly and at less cost with the acceptance of uniform inspection standards and reciprocal inspection between states. Widely varying health regulations in various cities and states decrease sales and increase costs.

12. **Use milk vending machines to increase milk sales at lower marketing costs.** It is estimated that vending machines could increase fluid milk sales by 500 million pounds annually. If properly operated and supervised, both indoor and outdoor vending machines could cut the costs of distribution considerably. It is estimated that outdoor vending machines can cut distribution costs by 1 to 3 cents per quart.

13. **Expand the use of milk dispensers.** Instead of individual half pint packages, they use 3 gallon or 5 gallon cans. Savings in packaging costs, passed on to the restaurant or hotel eating place, can run as high as 1 to 2 cents per half pint. Establishments with dispensers have increased milk sales 10 to 60 per cent. **THE END**

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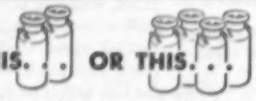

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VITALITY POINTS TO PROFITS
VITALITY MILLS, INC.

A closer look at green feeding

(Continued from page 283)

cow. Other stations report as high as 150 pounds. You should figure on a minimum of 100 pounds per cow.

How much labor required? . . .

The time and labor required in your own operation should influence your decision on whether or not to switch to this system of feeding. Unfortunately, very little research information is available on these requirements.

At New Jersey a direct cut forage harvester equipped with a mower bar was used. This piece of equipment is a necessity. The forage wagon should be large enough to permit harvesting at least 100 pounds of forage per head per day. In small herds this wagon might well be a self-feeding one so all handling of the forage is eliminated. The drawback to this type of wagon is the number of animals is limited that can feed from it at any one time.

To obtain labor requirement data the New Jersey station used 50 Holstein cows which were green fed twice daily for three months. The fields from which the forage was harvested were located from one to three miles from the dairy barn where it was fed. Time required for one man to harvest an average load of 2,500 pounds was as follows:

Connecting tractor, harvester, and wagon 15 minutes.

Traveling - barn to field and return 27 minutes.

Harvesting forage 36 minutes.

Maintenance and repair of equipment 20 minutes.

Total 98 minutes or 1.63 hours.

Since harvesting was done twice daily, the total labor requirement was 3.2 man hours per day.

In addition to the labor requirements outlined above, consideration must be given to any labor involved in the feeding operation. No time, of course, would be involved if a self-feeding wagon is used. If the forage is to be fed in bunks, a side unloading wagon should be considered.

Forking the forage off the wagons into feed carts and feeding the cows in the barn requires too much time. Records from our study show that feeding in this way requires 45 minutes for one man to feed 2,500 pounds of forage to 50 cows.

For purposes of comparison we estimated that the time and labor requirements for handling a group of 50 cows would amount to an hour a day. This would include maintaining fences, clipping the pastures, and driving the cows back and forth to the barn.

From the research that has been done on green feeding it seems reasonable to make the following conclusions:

1. This system can increase the amount of milk or meat produced per acre. Part of this increase is due to eliminating losses in forage generally caused by grazing animals.

2. By offering a fairly constant supply of forage, there will be less variation in daily milk production.

3. Under a green feeding program, greater use should be made of hay perennials or annual crops.

4. At least 100 pounds of green feed per head per day will be required. A supply of hay or silage should be available in the event of machinery break-down.

5. A careful analysis of the time and labor required should be made before adopting this system of feeding.

THE END

Fertilizer and rainfall

Yields of perennial grass hay varied directly with rainfall when the grass was fertilized with 40 to 60 pounds of nitrogen per acre in early spring, according to Nebraska agronomists.

Experiments were conducted with several cool-season and warm-season grasses, grown with and without nitrogen fertilizer, at three locations in Nebraska. Total yields of hay were low in dry years. Nevertheless, increases of 40 per cent or more were obtained from the application of nitrogen fertilizer.

Beginning in the fourth year of production, the yields from the unfertilized plots remained relatively low even though the available moisture was plentiful.

When the moisture supply was sufficient for good growth, the percentage of crude protein in the hay from the fertilized plots was about equal to or lower than that in the hay from the unfertilized plots. When moisture was limited, there was much more crude protein in the fertilized hay than in the unfertilized hay.

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ARTIFICIAL BREEDING

Studs are merging

Under pressure of heavy overhead and duplicating service, three important mergers have occurred in past six months.

by H. A. Herman

SINCE its founding in 1938, many changes have come to artificial breeding. The latest trend is consolidation, or merging, of organizations.

Within the past six months three important mergers have occurred and others are being considered. The mergers just completed are:

1. Southern Minnesota Breeding Federation and Land O' Lakes, both located in Minnesota, to form Consolidated Breeders, Inc. at Anoka, Minnesota;

2. Evergreen Breeders and Northwest Breeders, in the State of Washington, to form Evergreen Northwest Breeders Association at Burlington, Washington, and

3. San Pasqual Breeders, Escondido, California, joining forces with Roger Jessup Artificial Breeding Service at Glendale, California.

Why consolidate? . . .

The artificial insemination program sponsored by farmers' cooperatives and private ownership has long been a cold blooded business proposition. We can expect consolidation to bring greater efficiency in administration and the use of the best sires to the fullest extent.

When we realize that most breeding associations use only about one-half to three-fourths of the semen produced the advisability of reducing overhead is obvious. Overhead includes number of sires kept, laboratory facilities required, office and accounting force, and physical plant needed. It all adds up to more efficient, cheaper, and better sire service for the dairymen in the areas concerned

In most cases increased overhead costs and failure of the volume of business to increase accordingly have dictated the desirability of consolidation of breeding associations operating in the same general area.

Consolidation not for all . . .

While we can readily see advantages in the merging of associations in a given area, or in a state, we must realize that such moves are beset with dangers in many cases. For instance, it is very doubtful if mergers involving organizations in two different states are wise. Reasons for this opinion are that dairy farmers feel they have a voice, and a part, in the selection of sires and operation of the breeding associations in their states. They like to drive over on a Sunday afternoon and look at the sires. The progress made in improved production and type resulting from artificial breeding is carefully watched.

To remove the bull stud and the operation too far distant reduces some of this interest and takes away the pride of ownership most patrons have in their organizations.

The extension dairymen and college officials in every state aid and advise in the artificial breeding program. No two states follow quite the same policy and conflict of opinion is likely to result. Jealousies easily crop out and strong cooperation is likely to be endangered in between-state mergers.

The revival of rural churches as is going on in Missouri and many other states—the battle to maintain one room rural schools—because farmers look upon the local school and the local church as their assembly points, strengthens this opinion. Farmers don't like to drive to town to church. The atmosphere is foreign and they are generally talked down and out voted, so they stay away. (Saturday Evening Post, November 20, 1954, "The Country Church Comes Back to Life"). The same reaction of farmers to a bull stud they never see can easily occur.

Common sense should enable us not to let it happen by attempting to combine organizations in different states unless the membership is practically 100 per cent in favor of the move; even then we'd doubt the wisdom of it.

Latest mergers wise . . .

None of the mergers to date involve state lines. We heartily endorse them because they have all been made with a 98 per cent plus vote of members. They stand to render better service and become more financially sound than going their separate ways. In fact we can see little excuse for two organizations in the same area stagnating and incurring a fixed overhead beyond their income **because farmers pay the bill.**

The artificial breeding program freed of unfair, and needless, competition can render a service in improving dairy cattle this nation has never known to date.

We agree that competition is healthy in forcing the use of better sires, giving more efficient service, and doing an all around better job in the field. We must insist, however, that when two or three technicians, employed by competing concerns, are placed in an area where there is business enough for only one technician, the cost is increased to every patron of each competing organization. In remedying situations of this kind, which occur all to frequently, consolidation is sound.

The 600,000 dairymen in this country using artificial insemination are entitled to the best sires obtainable at the minimum cost of service. In most instances we believe it is being provided.

The author is executive secretary of the National Association of Artificial Breeders.

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GREEN GRASS feeding is the process whereby animals, usually cattle or sheep, are fed green grass in dry lot. "Bringing the feed to the cattle" is a common way of describing the procedure. Green grass is cut daily and fed to cattle in a confined area.

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Another method of feeding, "the corn stover silage" method is being currently introduced. The Lundell Forage Harvester is being used to make this most economical feed.

The idea of green feeding and the corn stover silage method is catching on fast. Users of Lundell Forage Harvesters throughout the United States and Canada report that: (1) More livestock is fed per acre; (2) Gains in milk, beef, and mutton are increased; (3) Loss from bloat is sharply reduced; (4) Feeding costs are reduced; (5) Closer control over rations and herd is provided; (6) Disposition of manure is controlled; and (7) All sizes of operation are adaptable to green feeding and corn stover silage.

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Typical of the enthusiastic reports from owners of Lundell Forage Harvesters is the report of Tom and Boy Hayes, farmers at Creston, Iowa who say: "We are really sold on Lundell equipment. Since we have been green feeding our stock, it has cost us less pound gained than by any other method. Best of all, bloat has been nearly eliminated from our herd. The machine's simplicity of design and construction make it a must for our farm.

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YOUNG DAIRYMEN

BASIC FARM PRACTICES

Calves can use silage

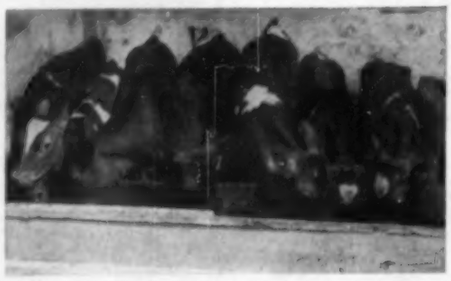
FEEDING top grade legumes is the practical way to provide part of the protein, calcium, and Vitamins A and D needed by the young calf. Roughage also encourages proper rumen development. The question often asked is "Can calves use silage?" It has long been an accepted practice that calves should not be fed silage until they are 4 to 6 months old.

Today hay crop silage is used on many dairy farms. Hay silage is different feed than corn silage, and must be considered separately. Good hay silage contains the calcium and protein that the calf gets from quality hay. It is also an excellent source of Vitamin A but lacks the Vitamin D found in sun-cured hay. Therefore we have a substitute for the legume hay.

Limited roughage capacity makes it necessary to give the calf only the best quality roughage. When leafy legume hay is fed and changed often the calves nibble off the leaves, and leave the less valuable stemmy parts of the plant. Therefore the quality of the hay eaten may be better than that of the hay fed. If the calf is fed only silage, this selection is more difficult.

The main thing is to have adequate intake of legume roughage to provide the essential nutrients. Quality hay is an excellent roughage for young calves. Whether or not to use silage will depend upon the quality of the dry hay and hay silage.

Start the calves on this good quality hay but supplement it with good hay silage when necessary. If the amount of good hay is very limited, save it for the youngest calves. After the calves are 6 to 8 weeks of age, good grass silage can serve as the only source of roughage, but if good hay is available, let the calf decide and feed both hay and silage free-choice.



LEGUME SILAGE contains both the calcium and protein that calves obtain from good hay.

Corn silage is more palatable but not as rich in protein and calcium. Therefore, corn silage does not make as good a supplement as hay silage for the young calf. Small amounts of corn silage may be fed to calves after they are 6 to 8 weeks of age. However, we cannot consider corn silage as a substitute for good legume roughage. Therefore, you should limit the amount of corn silage to 2 or 3 pounds daily until the calves are 4 to 6 months of age. Then the silage can be increased to 8 or 10 pounds a day. Corn silage and quality legume hay make a good combination for older calves.

Thus silage can have a place in the calf feeding program. The quality of the hay and the kind of silage is our guide in deciding how much to feed. When you first feed silage, do it gradually and note the growth and thriftiness of the calf. Poor growth is often an indication that the calf needs more nutrients, and since roughage is usually fed free-choice, additional grain may be needed to improve growth.

—J. W. Crowley
—R. P. Niedermeier

Farrow at 12 months of age

ALTHOUGH you 4-H and F.F.A. members may have the best equipment, the best boar and gilts, you may still find that your enterprise is not paying you the dividends you have a right to expect. Management of your resources makes the difference between a profitable project and one that is merely functioning.

Take your gilts as an example of the management problem. There are usually a number of sows discarded from the breeding herd after spring farrowing as a result of poor performance and because fewer fall pigs are raised.

This culling accounts for the large number of gilts which farrow each year. For most of you 4-H and F.F.A. members these gilts were usually of the best breeding stock available, and it is highly important that you should give them an opportunity to develop into good brood stock.

One way you can do this is to allow your gilts to develop more before farrowing. Farrowing the gilt at 12 months of age not only allows her sufficient time to grow and develop, but it has the added advantage of increasing the litter size. You can expect to make more profit from such a gilt by farrowing two litters a year from her.

A sow will generally farrow in from 112 to 115 days after she is bred. It may be as soon as 110 or 111 days and it may go over a few days.

Normally the sow should be placed in the farrowing pen about the 107th to 110th day. When the breeding date is not definite, you may keep the sow in confinement too long. This is very undesirable because the sow needs exercise at this particular time.

Farrowing two litters a year from good brood sows makes it possible for you to make the maximum use of capital invested in equipment. There is an even distribution of labor throughout the year, and it levels out the supply of hogs going to market. Your income from hogs is distributed over a longer period, reducing the risk in marketing.

—F. J. Giesler

BARNEY FARMLAN

"How come you work all the time, Mom?"

Line up equipment now

NO GREAT amount of special equipment will be needed to grow strawberries unless they are to be grown on a large scale. The plot selected for the planting will probably be plowed and harrowed along with the garden or other farm land.

No special tillage or cultivation equipment will be needed other than a sharp hoe and an ordinary garden rake. The garden rake is an excellent tool to use in a strawberry planting the first year. Use it early enough and often enough to destroy weeds when they are still small. The hoe is not a favorite of anyone, but it is the most effective tool against weeds.

The most important equipment to have is that needed at planting time. When the plants come they should be put in as soon as possible. Hunting up the equipment at the last minute may result in costly delays.

The following equipment should be on hand at planting time:

(1) a heavy cord to use for marking the rows; good straight rows make cultivation easier,

(2) a lath or stick at least 4 feet long marked plainly at 1-foot intervals. This is used to measure distance between plants and between rows,

(3) a spade or good sized trowel with which to set the plants.

It would be well to make sure you have enough of the proper kind of fertilizer available. If no barnyard manure is to be used, the following amounts of fertilizer will be adequate for 100 plants the first year:

(1) a small can or package of plant starter fertilizer (high analysis that will dissolve in water),

(2) 15 pounds of 5-10-10 or 10-10-10,

(3) and 3 pounds of 33-0-0 (ammonium nitrate).

These fertilizers are available at most garden or seed stores. —G. C. Klingbeil

How to use a soil map

IN THE February 25 issue a small sample soil map was presented with a brief explanation. It showed that a symbol, like 30-D-2 on the soil map, stands for three important things: the kind of soil (30= Dubuque silt loam), the slope (D= strongly sloping), and degree of erosion (2= moderately eroded). Just as a map of a mine shows where gold, lead, and silver ores are found, a soil map shows where productive and unproductive soils are.

If you want to buy a farm and have several places in mind, it is a good idea to look up these farms on soil maps before making the purchase. List the kinds of soils on each farm, with approximate acreages. Then find out from a soil survey book, or, better yet, from a soil surveyor just how well each soil can produce crops. Some soils require more fertilizer than others, and are therefore more costly to manage.

If you read in the paper that scientists have found out a better way to raise corn on Fayette silt loam, it is a good idea to look up a soil map to see whether you have any Fayette soil on your farm. Perhaps you do not have any of that soil, but you do have some Dubuque, which is similar. Then you will be able to try out the new methods with confidence.

What holds up your topsoil? The soil map and its accompanying bulletin tell you whether it is rich loam subsoil below, or rock and gravel. The soil conservation service will make a soil map of your farm free, and will tell you the names of the soils, and what they are like. —Francis D. Hole

Heifers . . . watch your diet

(Continued from page 287)

6,334 and 6,362 pounds of milk, respectively, which is practically the same.

When identical twins are fed at a normal rate compared to their subnormal mates, the differences are much greater in favor of the normals. D. S. Flux, in New Zealand, found that six Jersey twins fed on a normal ration, so they gained 79 pounds in 10 weeks before calving, produced in nine months an average of 4,244 pounds of milk. Their subnormal mates which did not gain in weight during the last 10 weeks of gestation produced an average of only 3,187 pounds of milk. Prelactation normal feeding thus supported 1,057 pounds, or 33 per cent more milk than subnormal feeding; so there was definitely no advantage in keeping heifers poor and lean before calving.

The indications to this point were that heifers with the same inheritance, identical twins, produced just as poorly when fattened as when underfed before their first calving, and that both were below normal. At the present time extensive experiments are being conducted in Sweden with identical twins comparing normal raising with both subnormal and supernormal.

Normal vs. supernormal . . .

Experiments have also been completed recently with identical twins at the University of Tennessee comparing normal raising with supernormal. The results of the first phase of this experiment have shown very definitely that fattening throughout the growth period prevented normal development of milking ability.

Four pairs of grade Jersey identical twin calves were started on experiment at 3 months of age. One of each pair was fed all the grain it wanted plus a limited amount of hay, and its mate was fed a more normal ration consisting of four pounds of grain daily until 1 year of age with hay and other roughage free choice at all times. The grain-fed heifers became quite fat before breeding age, 15 months, and at this time averaged 78 pounds, or 15 per cent heavier than their normal mates.

Typical pairs at breeding age are shown in the illustrations. At calving time, 24 months, the fat twins were 150 pounds, or 19 per cent heavier than their mates. No breeding difficulty occurred in either group and all first calvings were uncomplicated and normal. Two of the pairs were rebred and were compared in normal second lactations. The other two pairs became unsatisfactory for comparison because of different ailments before the end of their first lactations. After the first calving all pairs were fed alike during lactation and received only roughage while dry.

Normal heifers better milkers . . .

The production responses were variable, but the normal heifers were both better milkers than their supercharged mates in both their first and second lactations. The average daily milk production of the fattened and normal heifers, respectively, was 8.4 and 16.5 pounds in the first five weeks of the first lactation. In the second lactation the comparable daily averages were 12.3 and 23.4 pounds.

While the two fattened heifers averaged only 52 per cent as much as the normals, one actually milked 74 per cent and the other only 22 per cent as much as its mate. The latter fattened heifer was practically dry after five weeks; so the full lactation comparisons were even more unfavorable to the fattened twins.

The normals were milked an average of 152 days in each of their first two lactations and averaged 2,193 pounds of milk. The fattened ones averaged 768 pounds of

(Turn to next page)

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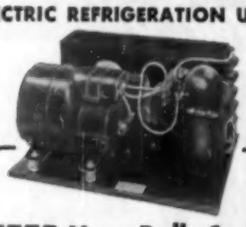

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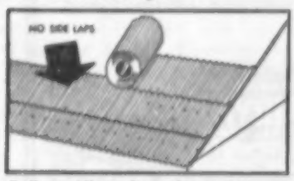

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milk in 87-day milking periods. Since none of these normal twins was a persistent producer, results comparable to these might not be duplicated with higher producing cattle, and similar experiments with heavy, persistent milkers are needed to supplement this investigation.

Since these twins had been proved to be identical by all known methods of detecting identical twins (including blood typing, color comparisons, body form, and actions) they had the same inherited milking potential; yet fattening in some way had inhibited its expression. These results were in substantial agreement with the Swedish reports from comparing identical twins.

What caused low production? . . .

Not a single heifer was sick or off-feed at anytime during the experiment. No clinical mastitis was noted. Milk let-down was checked, and found to be normal. The only apparent difference within the twin pairs was a slightly fuller udder on the normals. So, near the end of the second lactation the cows were slaughtered and the udders were removed and sectioned. The results are shown in the photographs. It is very clear that the udder of the fattened twin was not as fully developed as that of her normal mate. Part of her deficiency in production, therefore, was due to an imperfectly developed udder.

These results may explain why some get poor results from fat heifers and others report good results. The difference may be in the time that fattening occurred. If, as in these twins, fattening occurs early in life and the fat condition is maintained, udder development and lactation may be inhibited. However, if fattening or conditioning is delayed until just a few weeks or months before calving as in the New Zealand experiment, lactation may be enhanced.

The mammary gland is largely developed by the sixth month of gestation; so that late conditioning may not affect the mammary gland, and at the same time it might give the heifer a "body reserve" which could help to sustain high lactation.

Most heifers underfed . . .

A warning against early fattening of dairy heifers is not needed by many farmers. The great majority of young heifers probably are underfed. But occasionally someone tries to be "extra good" to a pet heifer and feeds it too much during the full growth period. This may be the reason for poor production of some 4-H club of F.F.A. project heifers or others which have been fattened for show.

Further trials with identical twin heifers are now being conducted at the University of Tennessee to determine at what stage of growth fattening is most harmful.

It has been found also that cows are not the only species in which fattening during growth inhibits lactation. Full-fed white rats milked only 56 per cent as much as mates which were fed only four-fifths of full-fed until they littered. This milk deficit resulted in fewer rats weaned from the fat mothers and lighter weaning weights. In their second lactations the rapid-growth rats still milked only 75 per cent as much as their normal mates.

These rat and heifer results indicate that the lactation potential of breeding females may be permanently damaged by early fattening. These implications are worthy of consideration by swine, sheep, and beef breeders, as well as dairymen.

THE END

Program to control weeds

A good modern program of weed control can be obtained by thorough adoption of a seven-step program, according to E. P. Sylwester, Iowa State College extension weed control specialist:

1. Sow clean seed of strong vitality. The ground supplies too many weed seeds as it is without "planting" more weeds with crop seed. Plant only cleaned seed and control weeds in crop seed fields.

2. Prevent weeds from producing. Three mowings during each growing season will, over the years, tremendously cut down the weed populations.

3. Destroy weed seedlings. Disk and harrow plowed ground at 7-day intervals early in the spring to encourage germination of weed seeds. Then kill the seedlings by using a harrow or weeder as the seeds germinate.

4. Destroy perennial spreading roots and rootstocks. The most effective way to do this is to plow ground late in May and cultivate with a springtooth harrow. Then follow with two springtooth harrowings each month in June, July, and August.

5. Use smother crops. Sorghum, sudan grass, soybeans, and millet can be used as annual smother crops for Canada thistle, quack grass, and a few other perennial weeds. Heavy stands of alfalfa are effective as smother crops, too, especially for milkweeds, thistles, etc.

6. Practice clean cultivation in growing crops. Through clean cultivation you can kill weeds while growing a crop.

7. Use chemical weed killers. There are many weed killers which are effective against certain weeds. Make your money do the best possible job by using the right chemical at the right rate and at the right time.

Weed killing is a long-time and painstaking job. The price of complete control is hard work and time. The long-run results are higher crop production, freedom from annoyance, more profits, a higher standard of living, and a great deal of satisfaction, Sylwester concludes.

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FOR Sale—4-6-8-10-12-16-Can Milk Cooler. For information please write THE SAN-A-PURE DAIRY COMPANY, 132 E. Main Cross Street, Findlay, Ohio, or call Phone 613. 2-6

MILK Coolers—Milk Houses. For information on the finest write direct to factory. MASTER-FREEZE, Dept. H., Sister Bay, Wis. 2-12

FARMS FOR SALE

SOUTHERN Wisconsin dairy farms, all located near Fort Atkinson, the world's dairy capital. Our lists are always complete. Write for free catalogue. LOGANWAY, INC., Wisconsin's leading farm brokers, Fort Atkinson, Wisconsin. 6-*

BLACKBELT dairy and cattle farms. No snows, 10 clovers and grasses $6.00 for milk. GEO. D. KNIGHT, Selma, Alabama. 2-7

VIRGINIA livestock, dairy farms and country estates. P. M. BROWNING, Realtor, John H. Hitt, Associate, Culpeper, Virginia. 5-*

200 ACRE northern Wisconsin dairy farm. 50 head of pure bred Jerseys. On highway 13. Excellent buildings. Harvestor. MRS. J. S. REEDAL, Phillips, Wisconsin. 5-2

NEW Strout Catalog. Just out! Mailed free. Farms, Homes, Business, 35 States. Coast-to-coast. over 2,750 bargains described. World's largest; 55 years service. STROUT REALTY, 7-T So. Dearborn St., Chicago 3, Ill. 5-2

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GEORGIA dairy, 150 cows mostly artificially sired. 300 gal. base with honest distributor. Sell now, lease 1000 acre highly improved farm. Plenty creek branch bottoms, abundance of water. Good schools, churches near by. Up-to-date barn equipment, 3 good houses with bath. Age and labor reason for selling. No debts hanging over my head. Chance to take over business that will keep on making money. BOX 465, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

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GOLDEN-GLO highest test Tennessee powdered rock phosphate available for immediate and future delivery. Quality, analysis guaranteed. Dealers wanted. EATON-MANN PHOSPHATE COMPANY, Joliet, Illinois. 2-*

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EXPERIENCED tester wants good Association. Single, twelve years in three associations. BOX 468, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

YOUNG Dutchman, single, 31 years old, graduate of a State Agricultural College, well trained in farming, much experience in machinery and farm management, wants to find a suitable job on an American farm. Reliable references can be expected. BOX 469, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

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HELP Wanted—Herdsman for 35 to 40 cow Holstein herd. Good equipment and salary. J. DICK NEWMAN, Culver, Indiana.

MARRIED Herdsman—No fancy buildings. Just a farmer's herd of 45 Guernseys with a fancy future. Eastern New York. State experience, salary, references. BOX 464, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WANTED—Reliable, sober, single man for dairy farm. Good home, good wages. Near Kenosha, Wisconsin. BOX 467, care Hoard's Dairyman, Fort Atkinson, Wisconsin.

WORKING farm manager to operate dairy farm in Michigan. Must have thorough knowledge of general farming, modern farm machinery and dairy cattle. Capable of handling men. Require references. Give full information. BOX 466, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 6-2

DAIRYMAN—One single, one married for large, excellent Holstein herd. List work background, references, wage and telephone. Write to Room 402, 300 West Washington Blvd., Chicago 6, Illinois. 6-*

FARM Manager. Experienced in dairy farming, sales, help, showing, breeding and making records. Outstanding Holstein herd. List experience in letter addressed to Room 402, 300 West Washington Blvd., Chicago 6, Ill. 6-*

WANTED—Experienced single man to work with purebred Jerseys. Must be machine and hand milker. Age 30-50. $175 per month and board. BOX 390, care Hoard's Dairyman, Fort Atkinson, Wisconsin. 21-*

APRIL 1st or sooner, single or married man for field work. Well equipped farm, northern Illinois. Full board, modern housing. Give references and wages wanted. BOX 453, care Hoard's Dairyman, Fort Atkinson, Wis. 4-3

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LEARN auctioneering. Term soon. Write for catalog. MISSOURI AUCTION SCHOOL, Box 8425D4, Kansas City, Missouri. 9-*

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EARN up to $400 monthly raising Angora and New Zealand rabbits. Plenty markets. Particulars free. WHITE'S RABBITRY, Jackson, Michigan. 19-*

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BUY Montana Hardy Alfalfas, Clovers and Grasses. Ranger, Grimm, Cossack, Hardistan and Common. Pasture mixtures, a specialty. Direct to the farmer at lowest possible prices. Write for descriptive catalog now. MONTANA SEED COMPANY, Bozeman, Montana. 4-4

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TREFOIL Seed. Albany County Empire Broadleaf Birdsfoot. Type long lived, drought resistant, adaptable to various soils; excellent hay, grass silage, pasture. $1.60 per 100 lbs. prepaid. Shipped anywhere United States. MED-O-DALE FARMS, Altamont, N. Y.

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This GUERNSEY Herd AVERAGED 12,119 pounds MILK 617 pounds FAT

THIS GUERNSEY HERD of 24 milking cows owned by C. Eugene Harding, Brookside, Pa., averaged 12,119 pounds milk and 617 pounds fat. Gene took over the farm just 3 years ago, after graduating from Penn State University. He's now on the road to success . . .

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Yes, this *is* a *Superior Milk* because it contains "more of everything good!" GOLDEN GUERNSEY MILK of 4.4% compared with regular market milk of 3.68% butterfat, contains approximately 15% *more* PROTEIN, 20% *more* VITAMIN A, 7% *more* SOLIDS-NOT-FAT, 4% *more* MINERALS, 19% *more* BUTTERFAT, and 14% *more* NUTRITIVE ENERGY.

FURTHERMORE, Guernseys are the ONE breed backed by a national trademark — plus a sound, proved, and growing milk merchandising program. GOLDEN GUERNSEY MILK is now sold in over 6,000 cities and towns across the country. Great opportunities are open for Guernsey owners. A representative will be glad to tell you about the GOLDEN GUERNSEY program.

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Write for facts on the GOLDEN GUERNSEY Program, and tips on how to start your own profitable Guernsey business.

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Please send free information about the GOLDEN GUERNSEY program.
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DAIRY DIGEST

COOPER SUCCEEDS HOUSEHOLDER

John E. Cooper, Assistant Manager of the Adams Dairy Company of Kansas City, Missouri, has been named Director of Extension with the Holstein-Friesian Association of America. Cooper succeeds Glen Householder, who retired February 1.

Besides being responsible for procurement and processing of milk, Cooper is a former fieldman with Adams Dairy and managed the Adams Dairy Farm and is part owner of the Holstein herd.

A graduate of the University of Missouri, he was a member of the dairy cattle judging team and is a former assistant county agent and dairy extension agent in Jackson County, Missouri.

BROWN LEAVES HOLSTEIN ASSOCIATION

Ben Brown, Director of Promotion and Publicity for the Holstein-Friesian Association of America for the past several years, has resigned and is now associated with the Gardner Advertising Company in St. Louis.

BENNETCH HEADS P.D.C.A.

Paul B. Bennetch, New Jersey Brown Swiss breeder, is the new president of the National Purebred Dairy Cattle Association. J. Homer Remsberg, Maryland, president of the Holstein-Friesian Association of America, is vice-president, and Karl B. Musser, recently retired executive-secretary of The American Guernsey Cattle Club, is secretary.

MARKETING CONFERENCE

The tenth annual Midwestern Milk Marketing Conference will be held March 28 and 29 at Purdue University, Lafayette, Indiana. The program will feature discussions of widening markets, bulk tanks, and public policy. For further information write Charles E. French, Agricultural Economics Department, Purdue University, Lafayette, Indiana.

ATTEND NATIONAL LAND JUDGING CONTEST

Farm youth and adults from 24 nations and some 30 states will participate in the fourth annual national land judging and the first annual national pasture and range contests at Oklahoma City, April 28 to 30. The first international land, pasture, and range judging school will be held in connection with the contests.

Entrants in the 4-H and F.F.A. divisions will compete for $2,200 to be awarded to the highest scoring teams and individuals, and medals and trophies will go to collegiate and adult division champions.

Detailed information on the contests may be obtained by writing the Extension Service, Oklahoma A&M College, Stillwater, Oklahoma.

Increases in milk consumption have been as high as 81 per cent in areas where local units of the National Dairy Council are organized.

MISCELLANEOUS

SILO Inner-Seal. (Guaranteed) Paint as emptying silo. Free folder. INDIANA SILO & PAINT CO., North Manchester, Ind. 30-*

PAINT, Outside Titanium, Lead and Oil. Guaranteed not to peel. $4.95 value, special factory price—$2.25 gal. Free sample. SNOW WHITE PAINT, Toledo, Ohio. 4-16

HIGHEST prices and prompt payment for your feathers. Ship to Midwest, known for dependability throughout the country. MIDWEST FEATHER CO., 1447 Blue Island Ave., Chicago 8, Illinois. 5-*

BILLBOOKS, Salesbooks, Business Printing, Letterheads, Envelopes, etc. ERSCO, Bronx 72, N. Y. Free Catalog. 4-apl

NEED stationery? You will like our livestock illustrations. We will print your order with your own breed on it. Write for stationery circular. HOARD'S DAIRYMAN, Fort Atkinson, Wisconsin. 20-*

Sale Announcements

March 28—Holsteins. 41st Anniversary Sale, Waukesha, Wisconsin. For catalog write—Baird & Darcey, Sale Mgrs., Waukesha, Wisconsin.

March 29 — The Watertown, Wisconsin Anniversary Sale, 7 miles north of Watertown, Wisconsin, on Highway 26. Baird & Darcey, Mgrs., Watertown, Wisconsin.

March 30 — Holsteins. Midwest Spring Classic, St. Charles, Illinois. Sale Mgrs., Baird & Darcey, Waukesha, Wis.

April 2—Guernseys. 43rd Annual Waukesha County Sale at Waukesha, Wisconsin. Lee Burlingham, Secretary & Fieldman, Baxter Street, Waukesha, Wisconsin.

April 22—Guernseys. The Big State Guernsey Sale, Waterloo, Iowa. M. W. Sprole, Clerk, Box 76, Mason City, Iowa.

April 25 — Midwest Invitational Sale, Waukesha, Wisconsin. Sale managed by Delbert H. Kingston and Associates, Cary, Illinois.

April 26—Lookout Valley Farms Dispersal, Lake Geneva, Wisconsin. Sale managed by Delbert H. Kingston and Associates, Cary, Illinois.

May 2—Michigan State Guernsey Sale, Kalamazoo, Michigan. Sale managed by Michigan G. B. A. and Delbert H. Kingston and Associates, Cary, Illinois.

May 7—Guernseys. Root River Guernsey Dispersal. Sale Mgrs., Phillips Sales & Pedigree Service, Waukesha, Wisconsin.

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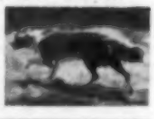

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USDA HYBRIDS

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PRODUCTION PLUS

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McDONALD FARMS MISTER VINCENT

born June 2, 1954 to the Sixth Guernsey Sire Sale, Springfield, Mass. on April 27, 1955.

SIRE: McDonald Farms Premier. A McDonald Farms Prediction son of McDonald Farms S. Marguerite-792-8r4-Excellent, sold for $11,750. Premier's first daughters in milk are beautiful and are milking good.

DAM: Tarbell Gallant Royalenda-VG-'54, 16431-809-8r4-305C-3rd in milk, 5th in fat in Class Leaders; next dam 15819-850-8r3-full sister-5th in 8r3 yr. old 305C division; next dam 20508-1109-Jr4-1st milk, 1st fat National Class Leaders.

McDONALD FARMS
CORTLAND, NEW YORK

FOR SALE
Bull born April 1954

From the Lenda cow family. Dam on test has 10285-508 in 305 days 8r2 3x, granddam 13,537,-762 8r3 305C 3x Class Leader, maternal great granddam 20508-1109 Jr4 Nat'l. Record. Sire, son of Douglaston Lady Augusta, has 56 AR daughters including Gallant Royalenda 16431-809 8r4 305C 3x Class Leader—also from Lenda family. An attractive individual.

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GUERNSEYS

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REGISTERED GUERNSEY BULLS

Choice registered Guernsey bulls by proven sires, such as **Horseshoe Conrad Asterbilt** and out of at least 400 pound dams, for sale. Large selection to choose from, serviceable age and younger. Calfhood vaccinated. Bang's free, TB accredited herd. Write or visit us for pedigrees and full particulars.

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THE BIG STATE GUERNSEY SALE

Waterloo, Iowa, April 22
LOTS OF HEIFERS — ALL AGES
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Young Guernsey bulls by outstanding herd sires and out of high production dams from good cow families. Ask for our DEFERRED PAYMENT PLAN. Also outstanding Yorkshire hogs from selective breeding.

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Purebred Guernseys

DO YOU WANT A HERD SIRE
from a cow family that is tops in type and production?

Write us for pedigrees and prices or if you can, visit our Wisconsin or our No. Carolina farms and look them over.

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Purebred and grades with outstanding production and type. Purebred bulls that will increase the value of your herds. T.B. and Bang's tested. Service to buyers is free. **JEFFERSON CO. GUERNSEY BREEDERS' ASSN., Fort Atkinson, Wis.**

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Offering select Guernsey bull calves up to serviceable age., **Sired** by McDonald Farms Pre Melvin, an outstanding type and production Sire. **Dams** are daughters of the great proved high production Sire, Flying Horse Masters Royal, large, typy, good uddered cows with records up to over 10,000 lbs. milk, 550 fat as 2-yr.-olds, 305—2x milking. **Heifer calves for club work for Sale,** the blue ribbon kind. **The Right kind at the Right price.** Write or come to **GRANDVU FARMS, Wrightstown, Wisconsin.**

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We now have a couple of very fine **bull calves for sale.** Proven production and type on both sides of pedigree. These are sons of McDonald Farms High Dairyman and Leeside Dairyman. A post card will bring you complete information and prices.

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WISCONSIN GUERNSEYS

Come to Wisconsin for your purebred Guernseys. We know most of the breeders in America's Dairyland and will give you honest and intelligent guidance in your selections. Good purebreds pay. **WISCONSIN GUERNSEY BREEDERS' ASS'N, Waukesha, Box 14, Wis.**

GUERNSEYS

Waukesha County can furnish you with most any kind of Guernseys you desire—grade or pure bred. **Lee Burlingham, fieldman, at your service. WAUKESHA COUNTY GUERNSEY BREEDERS' ASS'N, Waukesha, Wisconsin.**

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Brown Swiss have built their own popularity. Their consistent, profitable production over many years makes them the choice of better dairy farmers everywhere.

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Because of their size, their strength, their ruggedness and their ability to efficiently utilize pasture and coarse roughage, you will find Brown Swiss well adapted to your dairy farm conditions. They are truly the **"Farmers Cow".** Buy a foundation and you'll soon have a herd.

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The breed with Production and Type. Records of 10,000 pounds of 4% milk, year after year, at lowest feed cost. Built right, especially in feet, legs and udder. No breed so sturdy, active and vigorous. **For literature or list of breeders near you, WRITE**

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More Ayrshire bulls were bought from us in 1954 than from any other Ayrshire herd in the United States. We **ALWAYS** have good bulls. Write for pedigrees and prices. **STRATHGLASS FARM, Box 71, Port Chester, N. Y.**

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Bull calves from PROVEN sires and the AP. PROVED Carefree Diamond Jim whose 10 daughters average 11,532 lbs. Milk 4.32% 499 lbs. Fat on two times per day milking. Out of dams that are classified and official Herd Test records made on two milkings daily. Write for pedigrees and prices.

CAREFREE FARMS
"Traditionally The Best" NEW HAVEN, IND.

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Hoosierlea Farms, Franklin, Ind.
and
Scotch-Shorthorns of Quality and Breeding
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In Ayrshires, we are determined to give you More For Your Dollar

HERE IS A BULL CALF BORN JAN. 4, 1955

His Sire is out of the 1,036 lbs. fat record Excellent Neshaminy Miss Phett, 75 Ton Producer. His Dam is a 572 and 627 lbs. fat daughter of the one and only Storm Cloud of Windrow.

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7 miles north on Highway 26. 75 head of carefully selected Registered Holsteins including close and fresh cows, close and backward heifers, heifer calves and yearling bulls. Practically every cow in the sale has a creditable record or is from a good record dam. The heifers with enticing breeding have record dams. The yearling bulls including a great son of Raven, a top son of Leader and Nelsons Don bull are the best. Check the consignors and be convinced of our quality. Rawleigh Farms, Green Bay Reformatory, Lakeside Farms, Beckmann Bros., Alfred Paper, Neshonoc Farms, Fred Lueck House of Correction, Dorl Farms, Harold Draeger, Barrett Bros., Harvey Nelson & Sons, Albrecht Bros., Brandt-Cole, Sprecher, Morgan, Gray, Ed Brown, Cresthaven. A great opportunity to get rich breeding, splendid type, dependable animals from dependable breeders.

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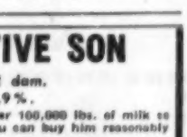

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SWINE

by R. H. Grummer

Marketing meat is big business

IT IS a long distance from a western ranch to a Boston butcher shop. The pork chop, picnic ham and spareribs in a New York self-service counter have little resemblance to the market hog that left an Iowa farm a week earlier.

Recently I had the privilege of accompanying a group of livestock producers on a two-week trip for the purpose of observing what happens to our livestock from the time they reach the market until they end up as retail cuts in some housewife's shopping bag.

As producers of livestock we are quite critical of the fact that we are told how much we will be paid for what we have to sell and also are told how much we have to pay for the things we buy. The fact is, we as producers have to be told what our hogs, sheep, and cattle are worth because we have no way of knowing. Regardless of the value of the animal, it is worth no more than the ultimate consumer is willing to pay.

We do have the privilege of asking any price we want, but if there is no demand for it at that price we cannot sell it.

Now let us take a look at the automobile salesman. He has a set price on his automobile, but he has problems too. He has the advantage in that he doesn't have to feed a car and therefore doesn't have to sell under immediate pressure. But he may call on prospective buyers for two or three days, or even a week, without getting a taker. It would be pretty discouraging to drive around with a load of hogs for a week without finding a buyer. We can be quite thankful that we can sell our animals at any time and be sure that competitive bidding is available to give us the top dollar for that day.

This brings up another point of misunderstanding. Many of us feel we don't get the top dollar for our livestock, but rather that the buyers get together and agree on a price, and that they purposely lower the price when a lot of animals are coming to the market so they can store the meat until the price goes up. Nothing could be farther from the truth.

First of all, buying is very competitive in most areas; the meat packers need volume to process meat profitably and they get volume by bidding more than a competitor bids, not by bidding less. I got the impression on this trip that just the opposite is true, that is, each company is quite secretive about its buying policy; one didn't want the other to know what they planned to do.

Success of a packing company depends largely on efficient processing and good merchandising.

No great quantity of meat can be stored. Meat is perishable; it has to move. Most of the animals that are bought today will be consumed within about 10 days. Coolers in the packing plants, coolers in the warehouses, and refrigerators in retail stores have to have meat moved through them rapidly.

There are two good reasons for this, one is that the meat will lose its appeal or spoil, and the other is that room has to be made for the newly slaughtered animals. Speculation in the meat business is relatively unimportant, and in my estimation has little or no bearing on the over-all price that we get for the live animal.

Another complaint we often hear is that there are too many "middlemen" and that these groups realize unusual profits. Actually there are relatively few middlemen in the meat business — no more than necessary for efficient buying, distribution, and merchandising of meat.

On this trip we saw that there is adequate competition in every phase of the meat industry. I think we can rest assured that very few, if any, are going to make a big profit anywhere along the line, because everywhere in this United States there are people looking for a business venture to make some money. If one fellow starts a retail meat shop and makes a wide margin of profit, it doesn't take long before another fellow opens another shop across the street and through competition, forces down that margin of profit.

Why then, we might ask, is there such a spread in price between the animals we sell and the meat we buy back?

There are a number of answers to this question, including the facts that the live animal is not all carcass; the carcass is not all meat; and the meat is not all in the form of chops and steak. But equally as important is the fact that the consumer is demanding costly service in the merchandising of meat.

In many areas Mrs. Housewife insists that the meat is cut and displayed to her liking. The slice or chunk must be of a certain size; the fat must be trimmed, the excess bone removed, the package attractively wrapped, the package labeled as to kind of cut, weight, price, etc. — all this requires labor and materials that add to the cost.

A steak dinner in a fancy restaurant or hotel may sell for $5 and the producer's share of the consumer's dollar for the piece of meat may be 25 per cent or less.

But this should be of little concern to us as producers because the man who buys this steak can afford to and wants to pay for the extra service charges in the aging, trimming, storing, cutting, handling, and preparation of the steak.

I think we as producers must realize we need the packer, the wholesaler, and the retailer because we can't slaughter and sell the meat from our animals. Furthermore, I think that the packers and distributors of meat appreciate that their business depends on whether the producers are making a profit. We need each other and we need more teamwork to further improve the welfare of our great meat industry.

VETERINARY COLUMN

E. A. WOELFFER, D.V.M.

Vaginitis in cattle

Of the many letters that come to us about breeding troubles, the majority deal with vaginitis. A typical expression is "our cows have vaginitis and we can't get them settled. What shall we do?"

It is true that vaginitis may interfere with fertility. Too often, however, the condition is given credit or is blamed for breeding difficulties when the underlying cause is something else. Confusion regarding the condition frequently exists. We are not always thinking and talking about the same severity or even the same thing. Vaginitis is a term well known to most of us, but its significance is not well understood.

Vaginitis means inflammation of the vagina. Any irritation or injury to the walls of the vagina may cause vaginitis. The type of vaginitis most frequently observed is a chronic form called granular or nodular vaginitis. The cause of this form of vaginitis is not known. One research worker experimentally produced the disease in healthy heifers by exposing their vulas to a streptococcus organism. Investigators suspect other organisms may also be responsible, including one or more viruses.

What does it look like? . . .

Vaginitis is recognized by a reddening of the mucus membranes of the vagina. If the vulva is involved, it is called a vulvitis or a vulvo-vaginitis. The nodular form is identified by the presence of small pimples located in the vulvo-vaginal area. The greatest concentration of granules is in the region of the clitoris located just inside the lower cleft of the vulva.

Mild chronic cases reveal only a few pimples and little inflammation. In severe cases, nodules are more numerous and membranes are reddened and swollen. A slight accumulation of pus is sometimes noted in the clitoris.

Similar lesions are frequently seen in bulls that are used principally for natural service. They are located on the glands, and on the mucus membranes of the prepuse. In the bull, as in the female, the condition may be mild or severe. Occasionally there is a correlation between the severity of the inflammation in the bull or cow and the rate of conception. Mild cases do not usually influence conception.

Acute vulvitis . . .

Very rarely veterinarians encounter an acute, highly infectious condition localized on the inner lips of the vulva. It is a vulvitis but it is conveniently or mistakenly termed a vaginitis. The vulva becomes swollen, reddened, and is painful. After a few days areas as large as dimes or quarters become denuded and pus is formed. The writer has seen only one severe outbreak of vulvitis in a dairy herd. The infection spread rapidly to almost every female in a barn of 80 head.

The cause of the infection was not determined, although a virus was suspected. It ran its course in two to three weeks and disappeared as mysteriously as it appeared. Treatment with soothing antiseptic oils gave relief to the animals, but none of the treatments tried seemed to materially influence the course of the disease. Untreated animals recovered about as rapidly as the treated animals.

Delay service . . .

When severe inflammation of the vagina or vulva is present, service to a bull should be postponed until the condition has cleared up. If it is necessary to breed an animal with severe vaginitis, artificial insemination should be employed. In such cases, it is advisable to also protect the inseminating tube with a sleeve or small speculum to guard against the possibility of carrying infection into the cervix or uterus.

If vaginitis is a problem in your herd, have your veterinarian check the herd and the herd bull. Remember also that vaginitis may be acute or chronic, severe, or mild. Its presence may or may not influence infertility. If sterility is a real problem, it is important that a correct diagnosis be established as soon as possible. Usually it will be found that the major cause of infertility is a venereal infection or a combination of problems in which vaginitis is most apt to play a minor role.

TEMPERATURE OF COW

What is the normal temperature for a cow? Would a temperature of 101 indicate an infection and what would cause the temperature to be below normal?
White Salmon, Wash. C. A. H.

The average normal temperature of a dairy cow is 101.5 degrees and the normal range is from 100.4 to 102.8 degrees. In extremely hot weather, the temperature may be even higher. In beef cattle it is about the same except for a few tenths of a degree lower.

The temperature of 101 degrees does not indicate infection. There are a variety of conditions that bring about below normal temperatures in cattle. Heart failure, interference with the heat regulating system, and pending death are some of the chief causes.

MILK FEVER DEATH

Is it possible to kill a cow by giving calcium gluconate solution through the vein for milk fever?
Johannesburg, Michigan. C. P.

It doesn't happen often but occasionally cows die while calcium gluconate is being administered for the treatment of milk fever.

NATURAL VS. ARTIFICIAL SERVICE

Is there anything to the supposition that if a cow is bred for a number of lactations by artificial insemination that she will not conceive when bred by a bull?
Laurel, Montana. J. A. L.

There is no evidence to indicate that cows bred by artificial insemination for a number of lactations will not conceive when bred subsequently to a bull.

The PROOF of fast, effective

MASTITIS CONTROL

is in the udder!

See how thoroughly

PENDISTRIN®

disperses throughout treated quarter!

Prove for yourself the effectiveness of PENDISTRIN in fighting mastitis—but do it the only way that gives positive results: *in your cow's udder.*

Millions of cases have been successfully treated.

The proof of a mastitis control product is not in the way it reacts when squirted into a glass of water, not in the way it behaves on your hands.

We would like to say it again: the only way to test Pendistrin's effectiveness is in your cow's udder.

Only in the udder—where it was designed to be used—can Pendistrin go to work. Only there can the special Squibb free-flowing Plastibase disperse quickly and thoroughly throughout the infected quarter, and release rapidly its two powerful antibiotics.

The antibiotic combination in Pendistrin—100,000 units of penicillin plus 100 mg. of dihydrostreptomycin in each tube—gives you one of the most efficient weapons known against virtually all types of bacterial mastitis.

For one of the fastest, surest means yet discovered to control mastitis, get Squibb Pendistrin from your druggist. You can *rely* on Pendistrin—made by Squibb, a name you can trust.

For additional information, write: SQUIBB, *Veterinary Department,* 745 Fifth Ave., New York 22, N. Y.

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Be on guard against mastitis—be ready to treat it at the first sign. See your druggist! Buy the handy Barn Box of Pendistrin. You save time—money too—when you buy by the dozen. All Barn Boxes have a 24-month dating. Look for them at your drugstore.

For accurate diagnosis of mastitis, consult your veterinarian.

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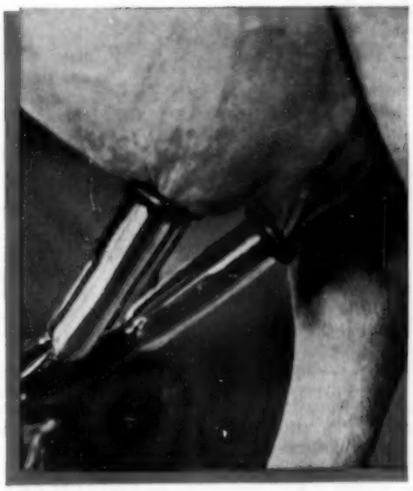

Even though hundreds of thousands of dairy farmers do use the Surge, not many Surge Users will have to milk by hand tonight because the Surge Serviceman didn't get there in time, or because he didn't know his stuff when he got there.

The very best piano that can be built has to be tuned up once in a while and so does the best-built milking machine. We sure do try hard to keep every Surge outfit tuned up to give you genuine Surge TUG & PULL milking twice a day—every day.

Millions of cows expect the Surge milker to be hung on them at the right time. We try never to disappoint even one of them.

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